An Examination of Trajectory Analysis: the Case of Air New Zealand Limited

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Abstract

Many studies have addressed the issue of company failure and the pioneering work done by John Argenti in 1976. Twenty one years later, Andrew McRobert and Ronnie Hoffman provided an update of Argenti's work for the 1990s. Their cumulative work involved a failure model and the failure trajectory theory (trajectory analysis). The failure model examines the defects, mistakes and symptoms that companies exhibit as they near failure. In contrast, trajectory analysis proposes three different pathways that companies can follow when they fail. Additionally, because of the particulars of each pathway, trajectory analysis should have considerable value in company failure classification. However, the limited examination of trajectory analysis provides considerable scope for further research into their propositions.

This thesis provides an examination of trajectory analysis. The examination involves firstly, an evaluation of the theory and discusses any deficiencies in trajectory analysis. Secondly, it produces a trajectory for a New Zealand case study: Air New Zealand Limited. Air New Zealand is a large, important New Zealand company that could have failed in 2001 if not for the intervention of the New Zealand Government. Thus, the case study chosen is a timely example of a large company collapse. Finally, the thesis determines the extent to which trajectory analysis is a failure classification model.

The results show that it is possible to create a trajectory that generally follows Air New Zealand's financial performance over time. However, in this particular case, it seems that trajectory analysis is not a failure classification model, but instead has potential as an early warning system to prevent failure.

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Chapter 1: Introduction

The last thirty years have seen a dramatic growth in the research examining corporate failure. Specifically, researchers have concentrated upon two major areas, the causes and symptoms of corporate failure, and failure classification models that classify companies as either failed or non-failed.

In 1976, John Argenti published a small book, which some researchers have seen as the beginning of the organisational approach to business failure (Van Caillie, 1999). Argenti produced a theory of corporate failure that covered both aspects of corporate failure research. He summarised the views of the leading writers, experts and academics in the area of company failure and examined two major failures of the 1970s, Rolls-Royce and Penn Central. This culminated in the production of a list of twelve causes and symptoms of corporate failure that Argenti felt best discriminated between failed and non-failed companies. Additionally, the research reviewed by Argenti suggested three major pathways to failure, which he described as failure trajectories. He believed that these failure trajectories should have considerable value as a failure classification model.

Subsequent research into Argenti's theories is sparse, with many researchers concentrating on the failure models first produced by Altman (1965) and Beaver (1966). However, this changed in the late 1990s when McRobert and Hoffman (1997) published *Corporate Collapse*. McRobert and Hoffman (1997) in effect modernised Argenti (1976a), using recent company examples to illustrate the various causes and symptoms of corporate failure, and the three failure trajectories. However, both Argenti's, and McRobert and Hoffman's theories suffered from one major limitation: they did not empirically test their research. Specifically, they never produced a failed company's trajectory, to determine firstly whether it could be done, secondly whether the company's trajectory matches one of their hypothesised failure trajectories and thirdly, whether the trajectory does have considerable predictive value.

This study presents an examination of the cumulative work of Argenti, McRobert and Hoffman on failure trajectories. Broadly, this thesis has two major research objectives. By meeting these objectives, it will provide a greater understanding of the usefulness of failure trajectories as a failure classification model. The first objective is to evaluate the failure trajectory portion of their theory of corporate failure. The second objective is to evaluate the application of the failure trajectory theory using a New Zealand case study. Four specific research questions are as follows.

- Does trajectory analysis meet a set of criteria to evaluate business research?
- How must trajectory analysis be changed so it meets the criteria?
- Does Air New Zealand exhibit a failure trajectory in the period 1989 – 2001?
- Can trajectory analysis be used as an early warning system of failure or can it predict company failure?

The New Zealand case study is that of Air New Zealand Limited during the period of 1989 – 2001. During those years, Air New Zealand was a publicly owned company whose majority shareholder was Brierley Investments Limited. Under Brierley's leadership, Air New Zealand went from a regional Australasian airline to one of the twenty largest worldwide airlines, after the takeover of Ansett Australia in the first half of 2000. However, in 2001, Ansett Australia and its Australian subsidiaries failed, which, if not for the intervention of the New Zealand Government, would have brought down the parent company. Air New Zealand is chosen because it was an important New Zealand company and because of the availability of information with which to create its trajectory.

The thesis is set out as follows. Chapter 2 summarises the relevant literature with respect to Argenti's research. It tracks the development of his theories over ten years, the contribution made by McRobert and Hoffman (1997), and discusses the comments made in, and tests done by, other studies. Following this, Chapter 3 outlines the research methodology used in this thesis. Additionally, it discusses the research objectives, the research questions and the data used to calculate Air New Zealand's trajectory.

Chapters 4 and 5 examine the failure trajectory portion of the theory produced by Argenti (1976a) and McRobert and Hoffman (1997). Chapter 4 evaluates it against a range of criteria, designed to measure business research theories. Chapter 5 attempts to develop parts of the theory, which did not meet the criteria discussed in chapter 4. The objective in chapter 5 is to produce a simple methodology with which to create a trajectory.

After producing a theory that is capable of being evaluated using a New Zealand case study, Chapter 6 introduces the case study, Air New Zealand. The chapter commences with Air New Zealand's beginnings as the Tasman Empire Airways Limited and the National Airways Corporation to their subsequent merger in 1978 and sale by the New Zealand Government in 1989. It then outlines the major internal and external factors that affected Air New Zealand's operations from 1989 – 2001. Where possible, it also discusses the major changes in ownership and control during the period.

By comparison, Chapter 7 investigates Air New Zealand's accounting policies and the notes to the financial statements, in an attempt to identify any creative accounting techniques. Briefly, creative accounting techniques reduce the reliability of accounting information. This is done to ensure that the accounting information used to measure the trajectory is accurate. After evaluating the company's financial statements, the chapter produces a set of data termed the 'worst-case' scenario. This is compared with the 'best-case' scenario, which is the data contained in Air New Zealand's financial statements.

Chapter 8 presents the results for this thesis. The chapter first outlines the individual indicators that collectively measure the trajectory. Secondly, it uses the indicators to calculate the best-case and worst-case trajectories. Finally, these trajectories are merged into the final trajectory, Air New Zealand's trajectory.

Chapters 9 and 10 provide the limitations and conclusions of this thesis and the avenues for further research. Chapter 9 concentrates upon both the methodological and data limitations as well as suggesting several areas of new research for interested readers. Chapter 10 presents the major conclusions of this study.

Chapter 2: Review of the Literature

2.0 Introduction

In 1976, John Argenti published *Corporate Collapse*. Responding to the lack of systematic research into company failure, he examined a range of sources that led him to produce a method to evaluate failing companies. Argenti proposed using both financial and non-financial data when evaluating a company for causes and symptoms of company failure. The final task in predicting failure would be to create the company's trajectory, which would graphically represent the company's performance over time. If the trajectory followed one of three hypothesised trajectories, the company would be more likely to fail.

Twenty years later, Andrew McRobert and Ronnie Hoffman (1997) published another book also called *Corporate Collapse*. This publication was essentially a re-examination of Argenti's (1976a) work, with a particular emphasis on company failures in Asia and Australasia. As is the case with Argenti (1976a), McRobert and Hoffman (1997) concentrated on the causes and symptoms of company failure and the usefulness of the company trajectory. However, they were equally concerned with the processes that interested parties use to turnaround collapsing companies.

This chapter will summarise the literature emanating from Argenti's (1976a) publication examining the causes and symptoms of company failure and company failure trajectories. Section 2.1 discusses Argenti's explanations of his causes and symptoms of company failure and the failure trajectories. Section 2.2 summarises the research following Argenti's research and prior to the publication of McRobert and Hoffman. Section 2.3 will discuss the developments of Argenti's ideas by McRobert and Hoffman (1997). Section 2.4 outlines the impact of their theory since McRobert and Hoffman's publication. Finally, section 2.5 provides a summary of the chapter, identifying the gap in this area of research that the present thesis will examine.

2.1 Argenti's explanations of corporate collapse

Argenti (1976a) began his book with an argument as to why company failure was a proper subject for study. He argued that the management literature and research focused too much on success. He stressed that the avoidance of failure is as much the job of managers as the achievement of success. Argenti's reasoning for examining failure was that if certain factors were present in all company failures, then they could be avoided to prevent failure. His aim was to produce body of knowledge about corporate collapse.

Argenti's (1976a) research was a systematic study of corporate failure. He firstly summarised the views of the leading writers on failure. Secondly, Argenti recorded the opinions of twelve leading experts in corporate failure. These included receivers, investment analysts, managers and journalists. Thirdly, he reviewed the findings of Altman (1965) and discussed Altman's 'Z Score', a model "*designed to estimate a company's propensity to fail*" (Argenti, 1976a, p. 10). Finally, he examined two major failures of the time, Rolls-Royce (failed on 4 February 1971) and Penn Central (failed on 21 June 1970), with the intention of testing the conclusions reached by writers and experts of the time. In his words, "*[the companies] pass the test with flying colours and a really clear picture of how companies enter the path of failure begins to appear*" (Argenti, 1976a, p. 10). Argenti (1976a) defined several terms, which table 2.1 reproduces.

Term	Defined in Argenti (1976a) as:
Collapse	"*When a company, which has hitherto been operating successfully, first begins to falter and then has to fight to remain profitable*" (p. 5). "*A company can be a failure without ever having been a success but it can only collapse if it was once successful but now is not*" (p. 6).
Failure	"*Refer[s] to a company whose performance is so poor that sooner or later it is bound to have to call in the receiver or cease to trade or go into voluntary liquidation, or which is just about to do any one of these, or has already done so*" (p. 6).
Insolvency	"*Cannot pay debts as they fall due or ... net assets are of negative value*" (p. 5).
Trajectory	"*A line on a graph, which is intended to represent the general health of a company*" (p. 153).

Table 2.1: Major definitions made by Argenti (1976a)

2.1.1 Causes and symptoms of company failure as seen by Argenti

From the above diverse sources on failure, Argenti (1976a) produced a list of twelve items he termed causes and symptoms of company failure. His initial proposition involved a simple two-stage process evolving from the presence of management defects. The management defects and other causes related to inherent problems in the company's operational structure. Argenti argued that they were present before company failure began. The symptoms related to observable factors that became apparent as company failure approached. These causes and symptoms will be summarised below; all page references in this section refer to Argenti (1976a).

Causes of Corporate Failure

Management: Generally, a failing company has poor management illustrated by six top management structural defects: one-man rule, a non-participating board, an unbalanced top team, a weak finance function, a lack of management depth and a combined chairman and chief executive. Each one of these defects is described in detail below.

1. One-man rule: "*describe[s] chief executives who dominate their colleagues rather than lead them*" (p. 123).
2. Non-participating board: "*functional directors who sit on the main boards ... [but] take little part in discussions on matters affecting the company as a whole*" (p. 124).
3. Unbalanced top team: Lack of a wide range of skills amongst the top team (p. 125). "*The top team includes directors, and very senior executives and advisors below director level*" (p. 124-25).
4. Weak finance function: "*A special case of unbalance in the top team*" (p. 125). This includes the situation where there is no finance director on the board, or when the board only meeting with the chief accountant when the budget is being discussed (p. 125).
5. Lack of management depth: Argenti (1976a) was "*less convinced that this defect is a useful indicator of possible failure*", since he would not know

how to recognise it unless it was obvious (p. 125). Argenti (1976a) did not define this defect.

6. Combined chairman and chief executive: Argenti (1976a) believed this is the most important management structural defect. A combined chairman and chief executive is at the top of the management hierarchy. "*There is no one above him to shake him awake or divert him or warn him or dismiss him*" (p. 126).

Accounting Information: There is an absence of the following four types of accounting information: budgetary control, cash flow forecasts, costing systems and valuation of assets.

i. Budgetary control: Refers to creating and using budgets to plan the company's performance over the following year(s). Without any budgetary control, "*managers may not have the slightest idea whether the company is doing well or badly*" (p. 127).

ii. Cash flow forecasts: Cash flow forecasts are used to outline known cash inflows and outflows to determine when a company will have cash shortages. If management ignore cash flow forecasts, a cash crisis can unexpectantly arrive (p. 127).

iii. Costing systems: to determine how much each product costs and the effect it has on profit (p. 127). This process distinguishes high yield products from their low yield counterparts. Failing companies generally do not produce any costing information.

iv. Valuation of assets: Argenti (1976a) was "*sceptical of this alleged defect*" (p. 127), because of loose accounting rules and the influence of inflation when valuing assets (p. 127). Note that the A-score (Argenti 1977; 1983; 1984) ignored this alleged accounting information defect.

Change: Argenti (1976a) argued that poor management (as detailed above) will not adequately respond well to change. The only relevant changes are those that "*strike at the core of a company's business*" (p. 128). There are five main groups: competitive, political, economic, social and technological environment.

a. Competitive Trends: including the emergence of low-cost producers, the merger of competitors, the announcement of new products and the entry of a new competitor (p. 129)
b. Political Change: Argenti (1976a) emphasised political attitudes towards business in general and industries in particular. Political change may affect a company's production resources, raw materials, markets and financing (p. 129).
c. Economic Change: all major macro-economic factors including foreign exchange movements, inflation, interest rates and the economic cycle (p. 129).
d. Changes in Society: including, but not limited to, changes in life-styles, attitudes to pollution and consumer protection (p. 129 – 130).
e. Changes in Technology: Argenti (1976a) believed this to be true in only certain industries. He noted "*it is sometimes a perfectly valid response to decide not to follow a change but to move into an area of lower technology, or a different one – or, indeed, to adopt any of the dozens of possible responses to a given technological change*" (p. 130).

Constraints: Generally imposed by external parties on how the company trades or more importantly, how it wants to respond to change (p. 130-32).

Overtrading: Argenti (1976a) was more interested with overtrading as it relates to a company that "*in an attempt to expand, increases turnover at the expense of profit margins*" (p. 133). The other major type is overtrading that forces the company to over-borrow to finance the continued overtrading (p. 132-133).

The Big Project: "*Any undertaking or obligation that is large compared with the resources of the company*" (p. 134). Failure of the project happens when "*costs and times are underestimated or revenues overestimated*" (p. 134).

Gearing: Increasing the amount of debt beyond the prudent limit (this amount differs for each business). A company with high debt may only be able to cover the interest payments and thus create a burden on the company's resources if the economy suffers a decline (p. 135-136).

Normal Business Hazards: defined as "*certain events which by common consent do cause the failure of companies but which, being normal hazards of any business, ought not to cause it and ... do so because the company is already too weak to survive the blow*" (p. 137). Examples include a fire at the company's warehouse, a strike at a supplier's premises, or movements in market share.

Symptoms of Corporate Failure

Financial Ratios: These can be useful symptoms of failure but Argenti (1976a) had serious doubts for three reasons. Firstly, ratios may show something is wrong, but they do not provide enough evidence to predict collapse. Secondly, inflation can seriously erode their effectiveness. Thirdly, "*managers will start creative accounting, thus hiding the telltale symptoms from everyone*" (p. 137-140).

Creative Accounting: Argenti (1976a) felt this is one of the most useful symptoms of failure. Managers use creative accounting techniques to hide the extent of their company's problems, which reduce the effectiveness of financial ratios. Argenti (1976a) described a number of creative accounting techniques that are intended to make a company's results better than what they actually are (p. 140-4).

Non-financial Symptoms: There are many non-financial symptoms in failing companies, although companies that are not failing may also display them. He did not construct a long list, "*because they will be different for each industry and even each company*" (p. 145). Examples provided by Argenti (1976a) include low morale, the demeanour of the top managers, decline in service or quality, and marking down of the company share price (p. 144-145).

The Last Few Months: The "*number and severity of the symptoms rapidly increase*" (p. 145). Argenti (1976a) suggested that the last few months would be of academic interest only, since it is far too late to take effective action to save the company from failure (p. 146).

2.1.2 The A-score

Later that year, Argenti (in 1976c) created his failure sequence. Instead of just causes and symptoms of corporate failure, he argued that failure could be analysed in three stages: (1) defects that exist in the management structure, which result in (2) mistakes made by management and finally, (3) symptoms of failure that become apparent. In effect, Argenti (1976c) described a failure model: defects led to mistakes that led to symptoms, which led to failure. This failure model formed the basis of his failure prediction model, the A-score (Argenti, 1977), provided in figure 2.1. Note that Argenti discarded one of the accounting information defects (valuation of assets) and two causes of corporate failure (constraints and normal business hazards) from both his failure model and the A-score.

Argenti (1977) assigned a numerical value to items in the A-score allowing a total of –7.0. Each value shown in figure 2.1 is the maximum allowed for each item, the minimum value is zero. To calculate a score for each item, one would first have to determine how severe the item is. For example, when valuing an autocratic chief executive, you could provide a maximum value of -0.5. However, if you believed that the chief executive is autocratic, but not extremely autocratic, you may only provide a value of -0.3, or -0.25 and so on. This makes the whole process very subjective. Most likely, two people evaluating a company with this version of the A-score would not get the same results. Argenti (1977) argued that a company with an overall A-score score of –1.0 should make the person scoring the company worry, whereas a score of –3.0 would mean only a major change would save the company. The A-score is a scorecard for bad management; therefore, most non-failing companies will score zero.

In later publications (Argenti, 1983; 1984), Argenti changed the values of the different factors that made up the A-score. The grand total was 100, instead of –7.0. Figure 2.1 also provides these different values. Argenti termed the 'pass mark' as 25 out of 100: if a company scores more than 25, than "*that company may well be dangerously far down the path to failure*" (Argenti, 1984, p. 14). Argenti (1983) suggested that most companies at no risk of failure will score between 0 – 18.

Additionally, he stated that there was a danger mark of 10 for defects and 15 for mistakes (Argenti, 1983). If a company scored more than 10 for defects, "*the observer is entitled to feel some anxiety lest these management defects lead the company into making [a] mistake [leading] to failure*" (Argenti, 1983, p. 21). If the score is greater than 15 for mistakes and less than 10 for defects, then management is running the company at some risk.

This version differed from his first version in that the value shown in figure 2.1 is the actual value allocated for each item. Argenti (1983) recommended that the scores should be given only if the item is clearly visible in the observed company. Therefore, if there were an autocratic chief executive, the A-score would increase by eight; the severity of the item is irrelevant. This removes one aspect of subjectivity (the perceived severity) from the A-score; however, one other aspect remains (determining whether the defect, mistake or symptom exists).

Finally, Argenti (1983) acknowledged he had not empirically tested the A-score to determine its predictive value. However, he stated that "*tests with approximately [1,000] accountants, managers and bankers in seven different nations over the past five years suggest a misclassification rate of 5%*" (Argenti, 1983, p. 21). This is an unsubstantiated claim, as he does not provide any references for this research.

One problem with Argenti's (1977; 1983; 1984) A-score is the weightings given to each item. He allocated points in accordance with his own personal opinion of their importance, thus creating a subjective weighting system. He stated that the weighting system is arbitrary and subjective, although he argued that the A-score is only composed of the factors that are widely accepted in the process of failure (Argenti, 1983). However, Argenti did not mention using different weightings to check the models sensitivity to ensure that the weighting's he chose were the most appropriate, that is to best discriminate between failing and non-failing companies. Thus, if Argenti's values are wrong, in that either his opinion of their personal importance is wrong, or that his values do not discriminate well between failing and non-failing companies, the A-score may well be a fruitless exercise in determining whether company failure occurs.

Defects	Depending upon the perceived severity, score up to a maximum of (Argenti, 1977):	Points Score (Argenti, 1984)
Management		
1. Autocratic chief executive who dominates his colleagues and will hear no advice.	- 0.5	8
2. The chief executive is also the chairman.	- 0.3	4
3. The skills on the board are unbalanced e.g. there are too many engineers.	- 0.15	2
4. There is no strong finance director.	- 0.15	2
5. Most members of the board do not actively participate in the big decisions.	- 0.15	2
6. There is no depth of professional management below the board.	- 0.15	1
Accounting		
1. There is no budgetary control system – there may not even be a budget.	- 0.2	3
2. There is no cash flow plan – if there is it is out of date	- 0.2	3
3. There is no costing system, no one knows what each product really costs nor know its contribution.	- 0.2	3
Response to change		
The company exhibits some clear and vital example of failing to respond to change – an ageing product, old fashioned plant, out-of-date attitude to employees, etc.	- 1.0	15
Total for Defects	- 3.0	43
Pass marks for defects		10
Mistakes		
Leverage		
The capital gearing or the income gearing of the company is noticeably high.	- 1.0	15
Overtrading		
The turnover is rising at a much faster rate than profits or cash flow.	- 1.0	15
Projects		
The company has launched a project of such a size that if it goes wrong it will more than exceed any possible cash available from all its sources.	- 1.0	15
Total for Mistakes	- 3.0	45
Past marks for mistakes		15
Symptoms		
Financial Signs		
The traditional ratios will deteriorate and cash will be extremely scarce. The share price will fall versus the Index.	- 0.25	4
Creative Accounting		
The Accounts will show evidence of window dressing to "improve" profits.	- 0.25	4
Non-financial signs		
The office needs painting, quality and morale falls, etc.	- 0.25	3
Nose-dive		
It becomes impossible to hide the last-gasp scramble for cash.	- 0.25	1
Total for Symptoms	- 1.0	12
Total Overall maximum possible	- 7.0	100
Pass mark	-3.0	25

Figure 2.1: Scorecard for the A-score

Another point of note concerning the A-score is that it contains both financial and non-financial information. Using the 1983 and 1984 weightings, financial information makes up 62 of the possible 100 marks[1]. Thus, later researchers (Keasey and Watson, 1987; Hall and Young, 1991; Elliott and Elliott, 2001) who presented Argenti's A-score as a non-financial model to classify failure are wrong as his model uses a range of financial and non-financial information.

Some articles written by Argenti subsequent to the production of the A-score (e.g. Argenti 1979a; 1979b; 1980; 1986a; 1986b) do not specifically mention the A-score. However, they do discuss Argenti's failure model (defects, mistakes and symptoms leading to failure) in some detail.

2.1.3 Argenti's failure trajectories

Argenti (1976a) took the twelve causes and symptoms of company failure and combined them into what he called a 'story-line of failure', provided in the following quotation:

> "*Companies which display certain defects in management structure associated with one-man rule tend to make two errors of omission and three of commission. The two of omission are the neglect of accountancy information systems and, worse, the failure to respond adequately to long-term changes in their environment. The three of commission are a tendency to overtrade or to launch a big project that is beyond their resources or to allow their gearing to increase so that even normal business hazards are a constant threat. Some companies, even quite well managed ones, can now be severely damaged by constraints upon their choice of response to change. As a company slides down the path to insolvency its financial ratios deteriorate, it begins to employ creative accounting, certain non-financial symptoms appear and it finally enters a dramatic last few months*" (Argenti, 1976a, p. 148).

[1] Financial information includes the accounting defects, the three mistakes, financial signs and creative accounting. An observer would have to use some type of financial information to determine these defects, mistakes and symptoms.

Additionally, Argenti (1976a) argued that "*not all failing companies display all these features nor do they all follow exactly the same route to insolvency*" (p. 149). Specifically, he suggested three such story lines: two were applicable to newly formed companies whereas the third applied to mature companies. The trajectory types follow a different sequence and "*each is marked by a different combination of causes and symptoms, which, [Argenti] believe[d], are unique to the type*" (Argenti, 1976a, p. 152). Thus, a trajectory diagram with its different sequence of causes and symptoms would have very considerable predictive value (*ibid.*, p. 152). Finally, Argenti (1976a) stated that failure takes time, a few years at least. As such, these items are dynamic and should be viewed over a time period (*ibid.*, p. 149). Figures 2.2 – 2.4 provide the graphs of the three different trajectories with time shown on the horizontal axis and 'general health' (left undefined) measured on the vertical axis.

Argenti (1976a) stated that the trajectory does not represent any one indicator (such as profit or turnover) for several reasons. Firstly, profit and/or turnover are subject to annual fluctuations. Secondly, creative accounting techniques affect profits and turnover. Thirdly, there are other indicators of general health including stock market share value, return on capital, employee morale, reputation with customers and suppliers (Argenti, 1976a, p. 153). Argenti (1976a) argued for the use of these latter indicators. Finally, there are five states of general health: failure (where the receiver is called in), poor, good, excellent and fantastic (Argenti, 1976a, p. 153).

Argenti (1976a) noted that not all of the different indicators of general health mentioned above could be measured accurately. As the measurement of each indicator is not uniform, they cannot be amalgamated mathematically into a composite indicator (*ibid.*, p. 153). The line therefore is a "*somewhat subjective construction from all these individual indicators, plotted against time*" (*ibid.*, p. 153).

A point to note is that Argenti (1976a) did not suggest that any of his causes and only two of his symptoms of company failure measure the trajectory. Return on capital is a financial ratio/sign, whereas the latter three indicators are non-financial symptoms. Possibly, this means that he believed that the two parts of his theory (causes and symptoms of failure and failure trajectories) should be applied separately or in tandem. That is the conclusion reached after reading Argenti (1977); whilst Argenti

provided the three trajectories in that article, he did not discuss them with respect to the A-score. Nor did a later study (Argenti, 1979a) refer to the A-score when outlining the trajectories. A detailed description of the three failure trajectories is provided in the following paragraphs.

A Type 1 failure only happens to newly formed companies. Generally, the company trades between two to eight years[2] before failure. The company starts with many causes of company failure listed by Argenti[3], which he states are typical of all new companies. The company trades for several years, albeit unprofitably or by making very small profits, until the problems with the operational structure become too severe and the company fails. Argenti describes the main feature of Type 1 failures as being that they "*never got off the ground*" (Argenti, 1976a, p. 150). Furthermore, this type is the most common of the three types, with 50 – 60% of all failures being Type 1[4]. Figure 2.2 shows a graph of this type of failure.

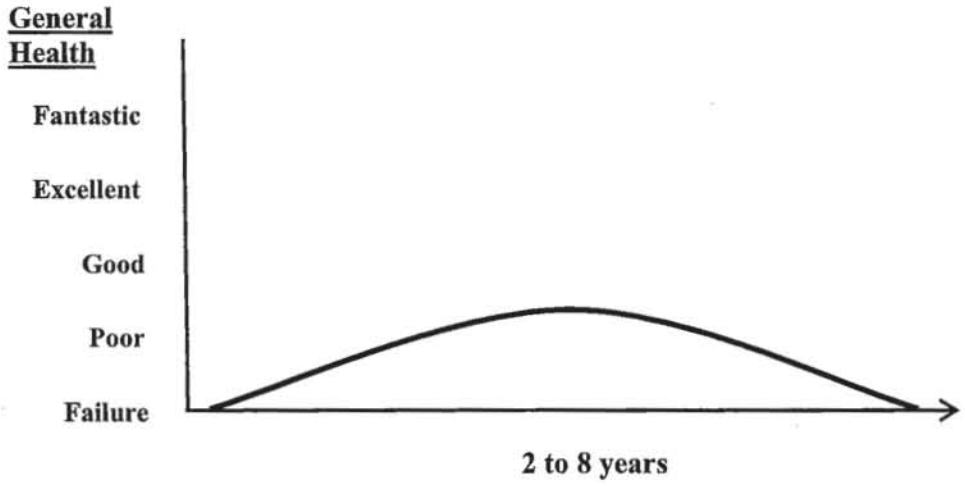

Figure 2.2: The Type 1 trajectory

Source: Argenti (1976a), Exhibit 8.2, p. 154.

Argenti's Type 2 failures also happen to young companies, although these companies operate from four to fourteen years (shortest and longest Type 2 failures known by

[2] Argenti cited Altman as describing a failure of two years, and A.F.L. Deeson, who described another company (Lanchester Engine Company) lasting eight years, from 1896 – 1904 (Argenti, 1976a, pp. 18 – 19, 154).

[3] He stated that all management and accountancy information defects will be present, as will high gearing and the big project when a company begins operations (Argenti, 1976a, p. 154, 155).

[4] Argenti (1976a; 1979a) asserted these figures, although no evidence is given.

Argenti, 1976a). A Type 2 company begins with the same causes of failure as the Type 1, with one major difference: this being that the proprietor has an 'outstanding personality'. As Argenti says, "*Type 2 proprietors are super-salesmen; they are leaders of men, flamboyant, loquacious, restless and bubbling with ideas*" (1976a, p. 158). In the beginning, the proprietor mitigates the major managerial defects and allows the company to become extremely successful, extremely quickly. Indeed, it seems that the major factor for these companies is that they expand too quickly; when the company should be consolidating its position, it continues to grow at a rate expected by its stakeholders. This rate is not sustainable and the company begins to collapse faster than it grew, especially because the company cannot hide its problems from its banks or shareholders. An important point concerning Type 2 failures is that they are extremely rare; Argenti (1976a) suggested only one or two of them in the United Kingdom for a given year. However, "*they attract attention ... because of the squeals of delight from the press on the way up the trajectory – and again on the way down*" (ibid, p. 160). Figure 2.3 provides the graph of the Type 2 failure.

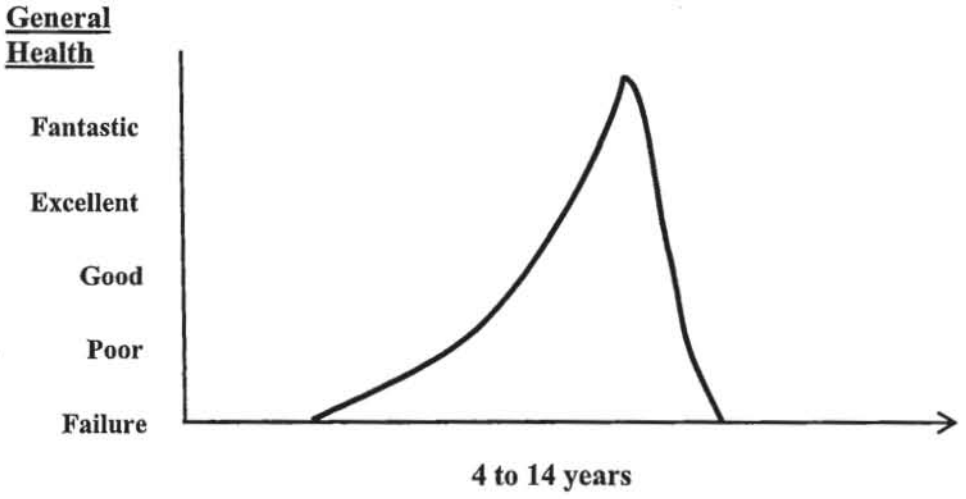

Figure 2.3: The Type 2 trajectory

Source: Argenti (1976a), Exhibit 8.3, p. 157.

The Type 3 failure occurs in companies that have been trading for a number of years or even decades. However, Argenti (1976a) claimed the company only remains operational for two to twenty years after it enters the trajectory. The Type 3 company is a successful, profitable company, which begins to exhibit many of Argenti's causes

of company failure. The company experiences a major downturn and will either overtrade or launch a big project that fails. However, the company itself does not fail because the company is too stable financially for the first downturn to cause failure. As the graph of a Type 3 failure suggests (see figure 2.4), the company reaches a plateau. The company is waterlogged at the plateau with high levels of debt; its profits will just cover the debt repayments. The company may remain on the plateau for several years, although it is also possible that this will be only a couple of month's duration. In an attempt to lift the company off the plateau, the managers will attempt something to improve the company: possibly a project greater than the company can afford. This second attempt fails; the company's situation worsens and failure follows soon afterward. Argenti claimed that the number of Type 3 failures is around 20 – 30% of all failures[5].

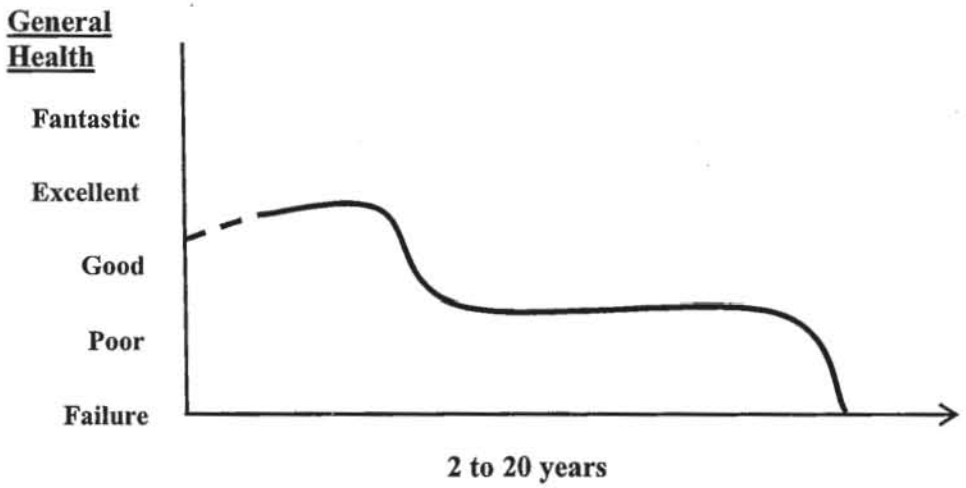

Figure 2.4: The Type 3 trajectory

Source: Argenti (1976a), Exhibit 8.4, p. 161.

Argenti (1976a) concluded his discussion of failure trajectories by acknowledging that companies can move from one of the three trajectories to a non-failing trajectory or vice-versa. For example, managers may rescue a Type 3 company after its initial collapse. Alternatively, a non-failing company may experience rapid growth before a

[5] Argenti's reasoning was that 20% of all failures are of companies older than ten years, which would all be Type 3 failures. Additionally, some Type 3 failures are companies between five and ten years of age (Argenti, 1976a, p. 161).

rapid collapse, typical of Type 2 companies. However, he believed that the analysis only needs three trajectories to explain the vast majority of company failures (Argenti, 1976a, p. 166). He also stated that it would be odd if there were only three ways a company could fail: "*many will fail without ever displaying any of the signs at all and never having moved down any of the three trajectories*" (*ibid.*, p. 168).

In subsequent articles, Argenti reinforced his arguments concerning the failure trajectories (Argenti 1976b; 1976c; 1979a). These articles emphasised that the trajectories were all variants of one theme, the failure model (Argenti, 1979) and that along the trajectories someone could stop the failure if they saw the signs (see Argenti, 1976b). Additionally, two of his articles (Argenti, 1976b; 1977) suggested that failure trajectories could be calculated using financial numbers. The three graphs provided to illustrate the trajectories had years on the horizontal axis and "*profits, turnover, etc*" (see the graphs in each article) on the vertical axis. This suggestion ignores his own discussion of general health (see above) and his argument not to rely on this type of information (see above, p. 14). Whatever his reasons for changing the vertical axis, a later article used the original axis, financial health (Argenti, 1979a).

This section discussed the importance of Argenti's initial research into both the A-score of causes, mistakes and symptoms of failure, and failure trajectories. One general conclusion from the above discussion is that Argenti never empirically tested his theories, alternatively relying of anecdotal evidence. Instead, he meant for his propositions to be the starting point for further research into both part of his theory. The following section examines the research upon each part during the following twenty years, until the research of McRobert and Hoffman (1997).

2.2 Argenti's impact on subsequent researchers up to 1997

This section splits the research into two parts. The first part is the research into Argenti's A Score (Argenti, 1977; 1983; 1984). The second subsection will discuss the research concerning failure trajectories (Argenti, 1976a; 1976b; 1979).

2.2.1 Research into the A-score

Early work by researchers into the A-score only summarised Argenti's failure model (see Sharma and Mahajan, 1980; Whetten, 1980; Slatter, 1984). Sharma and Mahajan described Argenti's A-score as a subjective attempt to analyse both the causes of failure and the performance indicators. The causes of failure are Argenti's defects and mistakes, the performance indicators Argenti's symptoms (see Sharma and Mahajan, 1980). Slatter (1984) empirically derived his own list of causes of failure, after examining a sample of 40 UK turnaround companies. He noted that this list was very similar to Argenti's (1976a); however, he did not examine Argenti's suggested symptoms of failure. Robb (1986a), in discussing Argenti's (1977) model, noted that it was both arbitrary and subjective: a point discussed in Argenti (1983) (see section 2.1.2). Storey, Keasey, Watson and Wynarczyk (1987) noted that although Argenti (1976a) provided no empirical evidence, he suggested several testable propositions, which they examined (see below).

Several studies have examined both Argenti's A-score specifically (Robertson, 1984; Mearns, 1991; Robertson and Mills, 1991a) or more generally his failure model (Keasey and Watson, 1987; Storey *et al.*, 1987; Hall and Young, 1991; Morris, 1997). Robertson (1984) and Mearns (1991) each evaluated the A-score using their respective case studies, Laker Airways and Lesney Products and Co Ltd. Both studies found evidence for Argenti's mistakes, although Mearns (1991) rejected the defects and symptoms portion of the score. In Lesney, none of the defects and all bar one symptom (the terminal signs) were apparent. Mearns (1991) concluded that only the mistakes portion of the A-score has predictive power. However, Mearns results were criticised by Robertson and Mills (1991a), who did not agree with his analysis. They showed that many of Argenti's symptoms were present and provided a more detailed analysis of how to determine when a company is overtrading or has high gearing. Robertson and Mills (1991a) concluded that the A-score still had power to predict collapse[6].

[6] Using Argenti's (1983; 1984) weighting, a company can be in the danger zone (i.e. over 25) by meeting two of the mistakes. Lesney Products met all three mistakes, scoring at least 45. The A-score predicted Lesney's failure: therefore, Argenti's model had some predictive power.

Keasey and Watson (1987)[7] provided an in-depth examination of Argenti's (1976a) work. The objective of their paper was to determine whether a model using non-financial variables (e.g. the different causes and symptoms discussed in section 2.1.1) could predict failure more accurately than one using financial ratios. They did not test the A-score; instead, they used a number of proxies meant to measure the different causes and symptoms of failure. Their sample used 73 failed and non-failed English single plant companies that operated from 1970 – 1983. They also used a holdout sample of another 10 failed and non-failed firms.

Keasey and Watson (1987) showed that in both failing and non-failing companies non-financial information differed in many respects. However, in testing whether these differences were enough to discriminate between failing and non-failing companies any better than ratio analysis, they only found that marginally better predictions could be obtained from the non-financial data. Furthermore, their results also generally supported Argenti's hypothesis concerning the process of corporate failure. Their conclusions are tempered by their choice of proxies: it is questionable whether the proxies are actually measuring Argenti's non-financial causes. For example, their management structure proxies examined only one type of management defects, the one-man rule. Keasey and Watson (1987) ignored the other five management defects.

Cause of Collapse	Managers perception (N=231)	Receivers perception (N=247)
Gearing	57	132
Accounting Information	44	68
Management	93	33
Other	37	14

Table 2.2: Summary of Hall and Young's (1991) results

NB The results in the table condense Hall and Young's results into four groups. Hall and Young (1991) had 36 primary reasons for why the company failed.

Hall and Young (1991) provided an indirect test into Argenti's work. They surveyed 247 small firms that failed from 1973 – 1983, examining management and the

[7] Note that this study summarised the work done by Storey *et al.* (1987).

receivers' views as to why the companies failed. Generally, the major reason for failure suggested by management or the receiver was one of those suggested by Argenti, see table 2.2.

It seems, even with this limited research, Argenti's ideas were becoming accepted by academics. Whetten (1987), and Keasey and Watson (1991a, 1991b) cited Argenti (1976) as an example of bankruptcy prediction. The latter researchers described Argenti's work as a "*dynamic model of business failure which did not rely upon financial ratios but rather on the fundamentals of the business and its management structure*" (Keasey and Watson, 1991b, p. 20). This article stated that research had generally supported Argenti's failure model, although they only quoted Keasey and Watson (1987) and Storey *et al* (1987). Sheppard (1994) and Tobin (1996) noted that Argenti's work was anecdotal and lacked empirical evidence, although Argenti provided an "*understanding of the road to bankruptcy*" (Sheppard, 1994, p. 814). Sheppard also speculated that certain variables should become more important than others, as the firm becomes more likely to fail.

Finally, Morris (1997), in a comprehensive review of various methods to classify failing companies, provided an indirect test of Argenti's A-score. Under case-study research, Morris evaluated several studies (including Argenti 1976a; 1983; 1984) which suggested a range of causes of company failure. Morris (1997) used two samples of failed companies: the first sample contained 25 companies that failed between 1973 and 1983; the second sample contained 21 companies, which failed during 1988 – 1993. He acknowledged that both failure samples were during prolonged recessions in the UK. His research in particular to the A-score is summarised in table 2.3. Generally, Morris (1997) found that many of Argenti's causes are present in his samples, the most important being autocratic management, lack of response to change and high gearing. However, Morris (1997) found other factors not acknowledged by Argenti, to be as important in determining failure as Argenti's factors, including a declining industry (18 and 14 in the two respective samples), undertrading (17, 18) and an acquisition strategy that fails[8] (13, 13). This cast doubt on whether the A-score includes all the causes that are widely accepted in

[8] Other researchers (e.g. Slatter, 1984; Tobin, 1996) included this cause as part of Argenti's big project that fails.

failure (see section 2.1.2). To summarise, Morris (1997) also provided limited support for Argenti's A-score.

Cause of company failure tested by Morris (1997)	Equivalent to Argenti's:	Number of Companies exhibiting cause	
		Sample = 25	Sample = 21
Narrow Ownership	Management defect (autocratic leadership)	21	15
Big Project Fails	Big Project mistake	5	0
Relatively High Borrowing	Leverage mistake	17	16
External Environment Changed	Change defect	17	19
Inadequate Controls	Accounting defect	7	7
Overtrading	Overtrading mistake	1	1

Table 2.3: Summary of Morris's (1997) results

Source: Morris, 1997: Tables 15.1 and 15.2, pp. 325 – 334.

This section has summarised the major studies that have discussed Argenti's failure model until McRobert and Hoffman's publication in 1997. According to Keasey and Watson (1991b), most company failure research in this period focused on the statistical models (e.g. Altman, 1968); many more studies examined neural networks[9] (e.g. Jain and Nag, 1997; Wong, Wang, Goh and Quek, 1992). However, some conclusions are apparent from the research. Firstly, the limited testing into his work generally supports his conclusions. Secondly, even though his work was anecdotal (Sheppard, 1994), subjective (Robb, 1986a) and provided no empirical evidence (Storey *et al.*, 1987), it was becoming accepted by 1997.

2.2.2 Research into failure trajectories

In comparison to research on A-score, there is very little discussion of Argenti's failure trajectories. Whetten (1980) provided an early evaluation of Argenti's work. He described the failure trajectories as "*success breeds failure*" and "*failure stimulates further failure*" organisational decline models (p. 157). The term 'success

[9] Neural networking is a type of 'black box' model, whereby only the inputs and outputs are identifiable, how the inputs become outputs is not easily observable. The process involves examining the interaction of the inputs with other inputs and outputs, until the model converges upon a result (see Morris, 1997, pp. 159 – 164, for a greater explanation of neural networking).

breeds failure' describes the Type 2 and 3 failure trajectories; the other term describes the Type 1 trajectory. Whetten (1980) suggested two areas of further research. The first area was to examine whether the trajectories should be identified and studied over time to determine whether trajectories predict performance. The second area related to management's attitude to innovation: does too much or too little innovation lead to failure, as suggested by Argenti, or does high innovation lead to high performance?[10].

Later researchers did examine Whetten (1980)'s suggested research. Laitinen (1991) found evidence of Argenti's three failure types. Laitinen used a sample of 80 Finnish companies (40 failed and non-failed) and six ratios[11], although he only examined the companies six years out from failure. He detected three types of failure: the 'chronic failure firm' where the ratios were consistently poor four years out from failure, the 'revenue financing failure firm' where debt and liquidity remained at an average level every year before failure, and the 'acute failure firm' where all the ratios dramatically worsened in the year before failure. The chronic failure firm is similar to the Type 1 since it is involves company with poor performance. The Type 2 trajectory matches the acute failure firm as both types collapsed just before failure. Finally, the revenue financing failure firm is Argenti's Type 3 failure; this group nicely describes a waterlogged company.

Hambrick and D'Aveni (1988) examined Whetten's (1980) second area of future research. One of their research questions was whether large business failures were typified by either too much or too little change, or a combination of the two just before failure. This level of change was in comparison to survivor firms. They used a sample of 124 US companies (62 failed and non-failed) with a mean turnover of $404 million and an average age of 56 years. Hambrick and D'Aveni (1988) found strong evidence for Type 2 and 3 failures at least five years out from failure. The standard deviations of 'new domains' (any new area of operations the company entered into)

---

[10] The reasoning here is that, leading up to failure, Type 2 companies are highly innovative, that is endlessly changing. By comparison, Type 1 and Type 3 companies are not innovative and do not change much. Yet all three types fail.

[11] The ratios used were return on investment, rate of growth in total assets, net sales divided by total assets, cash flow divided by net sales, total debt divided by total assets and the current ratio. He stated that the results remained the same even when he used twenty (unnamed) ratios.

were significantly different from non-failing companies, which suggested that failing firms were at the extremes (either too much or too little change).

None of the above studies produced a trajectory, instead determining whether three trajectories exist. Indeed, researchers generally summarised Argenti's failure trajectories, but did not attempt to produce a trajectory (Bibeault, 1982; Robb, 1986b; Buttery and Shadur, 1991; Tobin, 1996). For example, Bibeault (1982) summarised the three different trajectories similar to the summary in section 2.1.3, although he did not try to test Argenti's propositions or analyse them in any way. In comparison, Buttery and Shadur (1991), in summarising the trajectories, discussed them with respect to two (then) recent collapses, Bond Corporation and Cougar-Air. Buttery and Shadur stated that Cougar-Air represented a Type 1 failure and seemed to suggest that Bond Corporation was a Type 3 failure[12]. They did not do an in-depth study of either company and did not attempt to reproduce either company's trajectory.

Buttery and Shadur (1991) commented that Argenti's work needed to be revisited to develop a better understanding of collapse trajectories. However, no other known publication or study has examined failure trajectories until McRobert and Hoffman published their book in 1997.

2.3 McRobert and Hoffman's update of the theory for the 1990s

McRobert and Hoffman (1997)'s aims in their work differed from Argenti (1976a). Their aim was "*to provide a simple framework in which the causes of failure are itemised, the symptoms are listed, the ground-rules for diagnosis are set out and ... a prognosis and treatment may be found*" (McRobert and Hoffman, 1997, p. 16). They achieved this by setting out the causes and symptoms of corporate failure and suggesting procedures for avoiding and dealing with collapse. McRobert and Hoffman (1997) defined several terms; table 2.4 reproduces them.

[12] Buttery and Shadur stated, that "*most of these six items in trajectory 3 were present in the collapse of Bond Corporation*" (Buttery and Shadur, 1991, p. 42). However, the six items are the first six causes discussed in section 2.1.1. Thus, they are only saying that Bond Corporation exhibited many of Argenti's causes of corporate collapse.

Term	Defined By McRobert and Hoffman (1997) as:
Failure	A general definition is an inability to achieve a viable and sustainable economic mandate (p. 4). Their concise and ongoing definition is as follows: "*failing to provide, from its main operating business, a sustainable return, at least equal to that which is required of the enterprise by its sponsors, without a requirement for continual injections of additional funding*" (p. 4). McRobert and Hoffman (1997) included two groups of borderline failures within this definition: businesses in the private sector that do not achieve an acceptable return and are not liquidated, and businesses in the public sector that either do not or cannot achieve an acceptable financial return (p. 4).
Insolvency	The company either cannot meet its debts as they fall due because it is chronically illiquid or, has an excess of liabilities over the current value of its assets (p. 4-5).
Trajectory	"*Is a story-line, represented by a simple diagram. It is a single line on a graph, yet it represents the general all-round wellbeing of an organisation*" (p. 106).

Table 2.4: Major definitions made by McRobert and Hoffman (1997)

2.3.1 McRobert and Hoffman's (1997) causes and symptoms of corporate failure

Since Argenti (1976a; 1976c) had already determined the most important causes and symptoms of corporate failure, McRobert and Hoffman (1997)'s discussion was only a summary of them. In saying that, Argenti's and McRobert and Hoffman's causes and symptoms were not exactly the same; McRobert and Hoffman discussed several more causes and symptoms than Argenti. This section summarises McRobert and Hoffman's (1997) causes and symptoms of corporate failure; all page references in this section relate to McRobert and Hoffman (1997).

Causes of Collapse - People

Management: Failure is caused by the following eight important management structural defects. It is wrong to attach similar significance to the eight defects. The least important is "*management depth, which tends to be a sign of potential rather than actual weakness. The loudest warnings come from the presence of an autocratic chief executive*" (p. 34).

1. One-man rule: Occurs where the "*chief executive dominates rather than leads colleagues*" (p. 24).
2. A non-participating board: "*The functional directors ... on the board take little part in matters that affect the company as a whole*" (p. 28).
3. An unbalanced top team: Includes the directors, senior executives and advisors. Generally means they all have the same skills or expertise (p. 29).
4. Combined chairperson/chief executive: This person answers to no one because he/she is at the top of the management structure. By holding both positions, a combined chairperson and chief executive is not accountable to anyone inside the company (p. 29-30).
5. Inadequate strategic understanding: A lack of understanding with regard to the business environment, including markets and competitors (p. 31).
6. A weak finance function: Where the finance function is not represented on the board or is disregarded at board levels. This defect overlaps with an unbalanced top team (p. 31-2).
7. Lack of management depth: Not enough experienced senior and middle management with the necessary expertise to recognise and correctly respond to trouble (p. 32).
8. Success in any business: Management believes that since they have succeeded once, they will always succeed in any industry or economic situation (p. 32-34). This arrogance leads to other defects including inadequate strategic understanding.

Causes of Collapse – Circumstances

Accountancy Information: Specifically, four defects in the company's accounting information: budgetary control, the cash flow forecast, costing systems, and a system of internal control. They are each discussed in detail below:

i. Budgetary control: Budgets plan the company's performance over time. Without these controls, "*no manager will know with any certainty whether the company is doing well or badly*" (p. 37).

ii. The cash-flow forecast: Cash flow forecasts calculate periods of cash shortages to provide knowledge of when extra borrowings are needed. Without this type of forecast, there will be no advance warning of any cash crisis (p. 37).

iii. Costing systems: Provides information on how much each product costs and what affect it has on profit (p. 37).

iv. A system of internal controls: "*companies which collapse are companies which lack an effective control system*" (p. 38).

Change: McRobert and Hoffman (1997) believed that change in this context is not the small day-to-day variation in demand or supply but instead a major social or economic change (p. 40). Major social or economic change includes a new political regime, a new national alliance or the adoption of an entirely new socio-economic policy. It will affect all the aspects of the company's operations, including suppliers, customers and competitors (p. 39-42).

Constraints on Business: Imposed by external parties upon the company's trading activities, and how well they respond to change (p. 42-45).

Overtrading: There are two relevant types of overtrading suggested by McRobert and Hoffman (1997). Firstly, overtrading leading to over-borrowing to finance it (a badly managed borrowing process). Secondly, "*a company decides to increase turnover at the expense of profit margins*" (p. 47).

The Big Project: "*Projects that are big in relation to the size of the company managing them have caused an enormous number of failures*" (p. 148). Generally, this is caused by poor estimation of the budgetary and cash flow forecasts for the project (p. 48-9).

Gearing: Increasing debt amounts to a level where the company cannot reasonably keep up with the interest payments at all times (p. 49-53).

Failure of the Lenders: By not keeping a close eye on the company operations. It also involves failing to recognise fraud and bank incompetence (p. 54-6).

Normal Business Hazards: McRobert and Hoffman (1997) believed that normal business hazards only bring failure to "*a company which is too weak to survive an everyday blow*" (p. 57). Examples provided include a big customer moving to a competitor, the destruction of the company's stock in a fire and new technology that makes the company's process or product obsolete.

Signs of Collapse – Watch the Activities

Non-financial Signs of Collapse: McRobert and Hoffman (1997) suggested these signs indicate corporate failure: personal conduct, the salvation illusion, executive conduct, executive invisibility, selling the family heirlooms, financial statements, public perceptions, cosmetic accounting, pressure gauges, common sense and the final fling. Specific non-financial signs for trading bankers include rounded-off sums, post-dated cheques, the overdraft pattern, priority clearance, payments missed and detective work. Some of these signs are only applicable for specialised people. That is, not everyone will have the same access to company records to determine every one of the above signs. The more signals seen, the more advanced the state of deterioration (p. 66-81).

Signs of Collapse – Look at the Books

Financial Signs: Are examined using key financial indicators/ratios. McRobert and Hoffman (1997) discussed the following general types of financial ratios: capitalisation, assets, management, earnings and liquidity ratios (p. 83-85). They note that there are no "*specific measures which highlight the deterioration of the company's ability to sustain a viable business*" (p. 85). Management will only employ creative accounting when all is not well with their company (p. 85).

Cosmetic Accounting: McRobert and Hoffman (1997) distinguished cosmetic accounting from creative accounting. They used the term creative accounting to refer to acceptable accounting techniques that provide more information regarding the performance and position of the company (p. 87). However, cosmetic accounting is "*when the intention is less innocent and when the technique is used to distort the*

matter, to mislead the observer" (p. 87). Finally, they stated, "*cosmetic accounting is one of the most reliable symptoms of impending doom*" (p. 89).

Cash-flow Analysis: A lack of cash causes crises in company affairs. A cash-flow analysis can provide a reliable early indicator of failure (p. 90, 92).

2.3.2 The failure trajectories

McRobert and Hoffman discussed Argenti's failure trajectories by examining their theory and practice (McRobert and Hoffman, 1997, p. 5). In fact, they only discussed the theory of failure trajectories. McRobert and Hoffman (1997) discussed a dozen items that occur in a large number of company failures. The following quotation reproduces their description of the storyline or trajectory. A point to note concerning their storyline is that they have separated non-financial symptoms and the last few months; McRobert and Hoffman (1997) included the last few months in their definition of non-financial symptoms (see section 4.3.1)

> "*Companies which (1) display certain defects in management structure (usually associated with one-man rule) show two errors of omission and three of commission. The two errors of omission are: (2) the neglect of accountancy information systems and, worse, (3) the failure to respond adequately to long-term changes in their environment.*
>
> "*The three errors of commission are: (4) a tendency to overtrade or (5) to launch a big project which is beyond the company's resources, or (6) to allow their gearing to increase so that even normal business hazards are a constant threat. The process of decline is accelerated as cash flow (7) deteriorates rapidly.*
>
> "*Some companies at this stage, even though competently managed, can be severely damaged by (8) constraints which are placed upon their ability to respond to change. Then, as a company slides down the path to insolvency and its (9) financial ratios deteriorate, it begins to (10) employ creative accounting. At the same time, certain non-financial symptoms (11) start to*

appear and the company begins to (12) enter its dramatic last few months"
(McRobert and Hoffman, 1997, p. 104)

With respect to the above quotation, McRobert and Hoffman (1997) went on to say, "*The list is dynamic, and not merely static. So it should be viewed and measured against a time frame*" (p. 104). Additionally, "*Not every troubled organisation displays the same features, in the same sequence, and at the same time. Nor will they follow the same route to insolvency. But, their trajectory shapes show a depressing similarity*" (McRobert and Hoffman, 1997, p. 105). Therefore, the failure trajectories should be very reliable predictors, depending upon the type of organisation, its situation and the circumstances in which it operates (*ibid.*, p. 106).

In measuring the trajectory, McRobert and Hoffman (1997) argued that the trajectory does not represent any one corporate indicator, for example profits or turnover. Instead, the trajectory is a far more broadly based indicator and therefore more reliable. There are several reasons for the greater reliability of the trajectory. Firstly, it is not subject to strong annual fluctuations. Secondly, cosmetic accounting does not affect the trajectory. Thirdly, factors including stock-market share value, return on capital, employee morale, reputation with customers and relationship with suppliers measure the trajectory. These factors maybe more difficult to determine; however, they are also difficult to conceal (McRobert and Hoffman, 1997, p. 106-7).

They continued by stating that not all of the above factors can be measured accurately to some internationally agreed scale. Thus, they cannot be amalgamated to a universally accepted formula (for example, Altman's Z score method). Specifically, Altman's (1965) approach may not be useful as it moves away from where he created it, the United States (McRobert and Hoffman, 1997, p. 107). Altman's (1965) approach was for a specific industry, company size and time period. Examining a company that does not fall within the criteria will produce invalid results.

Their graphs of each trajectory differed slightly from those shown in figures 2.2 – 2.4: the vertical axis on McRobert and Hoffman's graphs measured 'corporate wellbeing' (left undefined) instead of general health. Finally, they had the same five states of

corporate wellbeing: failure (where the receiver is called in), poor, good, excellent, and fantastic (which is a very rare state) (McRobert and Hoffman, 1997, p. 105).

The discussion of the three trajectories is similar to that in section 2.1.3 and will not be summarised here. Suffice to say that they claimed that the average Type 1 failure has a life of about five years. Figures provided by McRobert and Hoffman (1997) show that the proportion of Type 1 companies to all company failures is at least 50%, to 70% in Australia and as high as 80% in Britain[13].

With respect to Type 2 failures, McRobert and Hoffman (1997) suggested that the greater the annual growth experienced by a given country, the more likely the occurrence of Type 2 failures. Therefore, only mature economies will experience one or two Type 2 failures a year. Finally, McRobert and Hoffman, unlike Buttery and Shadur (1991), viewed the Bond Corporation as "*[t]he best available example of a company on a Type Two trajectory*" (1997, p. 114).

McRobert and Hoffman (1997)'s discussion of Type 3 companies was practically the same as that done by Argenti. The only differences relate to the company examples used to illustrate the trajectory. McRobert and Hoffman concentrated more on Asian and Australasian failures whilst Argenti (1976a) used British and American failures.

McRobert and Hoffman (1997) ended their discussion of failure trajectories in the same way as Argenti (1976a), in an examination of the number of trajectories. They noted that companies could slide into trouble but not fail, and be visible on one of the trajectories, thus moving from one to another (McRobert and Hoffman, 1997, p. 125). Additionally, companies will not conform precisely to one of the three curves. However, "*when the story of a failure is observed as a whole (rather than a succession of incidents), the three-trajectory theory withstands most attacks*" (*ibid.*). Interestingly, McRobert and Hoffman (1997) seemed to disregard Argenti's research after his initial 1976 publication. Whilst they did discuss Argenti's failure model (McRobert and Hoffman, 1997, p. 64), their discussion of the causes and symptoms of

[13] The general and Australian failure figures come from undisclosed research projects (McRobert and Hoffman, 1997, p. 108). The British figures come from Cressy and Storey (1995).

company failure only summarised Argenti (1976a). Furthermore, they included two causes of failure (constraints on the business and normal business hazards) that Argenti (1976c; 1977) discarded in his failure model and A-score. McRobert and Hoffman (1997) ignored Argenti's A-score, instead using a format similar to Argenti (1976a); they also did not explicitly discuss any of the research done into Argenti's work.

McRobert and Hoffman (1997) illustrated the causes and symptoms using company failures that had happened in the 1980s and early 1990s. This evidence was anecdotal, with no empirical tests into the different causes and symptoms of company failure, or the failure trajectories. A general conclusion of McRobert and Hoffman's (1997) work is that it is just a summary of Argenti (1976a). Consequently, their research, apart from modernising Argenti's work, added very little since their conclusions generally matched Argenti's (1976a).

2.4 Argenti, McRobert and Hoffman's impact on research after 1997

McRobert and Hoffman's (1997) have had no impact on subsequent writers. No known study discussed their work, instead concentrating on the older work done by Argenti. The research itself is descriptive, with no actual testing of either the A-score or the failure trajectories.

Van Caillie (1999) and Van Caillie and Arnould (2001) described Argenti as the starting point for the organisational approach to business failure. These two studies and others (van Witteloostuijn, 1998; Liu and Wilson, 2000; Perrin, 2000; Mellahi, Jackson and Sparks, 2002; Dizdarevic, Larrañaga, Sierra, Lozano and Peña, 1997) described Argenti's work in varying degrees. However, several studies noted that Argenti's work was anecdotal (Perry, 2001), restrictive in the choice of defects and mistakes (Perrin, 2000), or that he did not provide any empirical evidence to prove his propositions (Van Caillie, 1999; Quantum Finance Enterprise, 2000; Van Caillie and Arnould, 2001).

Nonetheless, it does seem that, allowing for the lack of research, Argenti (1977; 1983; 1984)'s theories concerning the A-score have become widely accepted. At least one undergraduate accounting textbook has discussed Argenti's A-score in some depth (see Elliott and Elliott, 2001). Additionally, seminars have examined the A-score as an example of business risk analysis (see Terrapinn, 2002).

2.6 The gap in the literature

Before discussing the gap in the literature, a general conclusion is apparent from the above literature; all of Argenti's theories have had very little empirical testing. Most research into business failure has either concentrated on quantitative methods (e.g. Beaver, 1966; Altman 1965; 1968; Taffler, 1982) or, in the 1990s, neural network analysis (for a summary of research, see Morris, 1997; Abouzeedan and Busler, 2002; Abouzeedan, 2002). Indeed, much of the discussion into Argenti's work is in the management field of organisational decline, not the field of business failure classification. This explains why there are a number of untested propositions concerning the A-score and failure trajectories.

In the empirical work done on Argenti's theories, researchers have concentrated on the causes and symptoms of corporate failure (or the A-score), including several case studies. However, they have tended to concentrate on the mistakes portion of the A-score and ignored the defects and symptoms (see Robertson, 1984; Mearns, 1991). Largely the research tends to support Argenti's propositions, especially those in relation to the mistakes made by management (Robertson, 1984; Mearns, 1991; Robertson and Mills, 1991a).

In comparison, the research into the failure trajectories is rather sparse. There is evidence to show the existence of Argenti's three trajectories (Hambrick and D'Aveni, 1988; Laitinen, 1991). However, there is a range of undefined terms, including what the vertical axis of the trajectory is. Further, no known study has taken an actual company and produced its trajectory. Argenti (1976a) came closest with his discussion of the failure of Penn-Central and Rolls-Royce, yet he also did not produce those companies' trajectories. There are several untested propositions. For

example, are there only three failure trajectories, and is it possible to calculate a company's failure trajectory?

This thesis will begin to fill this gap by examining more closely Argenti's failure trajectories. This involves evaluating the theory as summarised in sections 2.1 and 2.3, and creating the trajectory of a company that collapsed, but has not failed. The following chapter will summarise the research methodology used in this thesis.

Chapter 3: Research Methodology

3.0 Introduction

Chapter 2 has shown that there is a lack of research into the theory produced by Argenti (primarily 1976a), and updated by McRobert and Hoffman (1997)[14]. Whilst there has been some research into Argenti's (1977; 1983; 1984) A-score, little or no research has occurred into the hypothesised three-failure trajectories that a company will follow when it collapses and fails. This chapter will outline the methodology used for an in-depth examination of the three failure trajectories, including evaluating the theory using a case study.

Section 3.1 produces the research questions answered in the remaining chapters. It will outline the questions and the specific ways they will be answered. Section 3.2 discusses the data sources used in the thesis. This section shows that while the number of data sources is small, the information contained in them is complex. A summary will follow in Section 3.3.

3.1 Research Aim

Buttery and Shadur (1991), in discussing Argenti's work, suggested that, "*[it] needs to be revisited to develop a better understanding of collapse trajectories*" (Buttery and Shadur, 1991, p. 38). McRobert and Hoffman (1997), although possibly unaware of Buttery and Shadur's comments, followed their suggestions when they updated Argenti's work with examples drawn from Australasia and Asia. However, McRobert and Hoffman's (1997) update was just that, an update. They did not adequately test Argenti's propositions, instead relying on anecdotal evidence from many various company failures. Importantly, McRobert and Hoffman did not test Argenti's hypothesis of failure trajectories using a sample of failed companies.

[14] For the remainder of the thesis, the acronym "AMH" will be used when discussing the cumulative work of Argenti, as summarised in chapter 2, and McRobert and Hoffman (1997).

The research aim is to provide a thorough examination of failure trajectories as discussed by AMH. The following chapters will expand on the work done by AMH and evaluate their work using a New Zealand case study. More specific research questions and objectives are in the following subsection.

3.1.1 Research Questions

There are two major research objectives. The first research objective is to evaluate the failure trajectory portion of AMH theory. Chapter 2, in outlining previous research into their work, also summarised their theory of corporate failure. Part of this theory relates specifically to failure trajectories. The first research question is: does trajectory analysis meet a set of criteria to evaluate business research? The thesis uses several criteria to evaluate trajectory analysis; these are discussed in greater detail in chapter 4. If the theory does not meet all the criteria, the second question is the following: how must trajectory analysis be changed so it meets the criteria? Basically, this thesis will develop the theory to correct any areas of the failure trajectory portion that do not meet the criteria. It is this developed theory that will be applied in the second research objective.

The second research objective is to apply a practical example to the failure trajectory portion of AMH's theory. This thesis will use a New Zealand company, Air New Zealand Limited, as the practical example to evaluate the usefulness of failure trajectories as a failure classification model. Air New Zealand is chosen, not because the company failed, but because it is a recent collapse of a large, vitally important New Zealand company. This thesis will use various data sources to measure the indicators of financial health, which are then used to measure the trajectory. Furthermore, as some of the indicators involve accounting information, this thesis will evaluate Air New Zealand's accounting policies for two reasons, to ensure consistency and to identify creative accounting techniques. Chapter 5 expands on the process used to evaluate accounting policies. Finally, the resulting trajectory will be subjected to a sensitivity analysis. The analysis will check the robustness of the trajectory and analyse changes in the trajectory caused by changing the relative weights of the indicators.

There are two further research questions for this research objective. Firstly, does Air New Zealand exhibit a failure trajectory in the period 1989 – 2001? The type 3 failure trajectory is the logical choice as the trajectory Air New Zealand will exhibit since the company is a mature company that has been trading since the 1940s. However, since companies can move from non-failing to failing trajectories, Air New Zealand could exhibit one of the other two trajectories instead (see above, pp. 17, 31).

Secondly, can trajectory analysis be used as an early warning system of failure or can it predict company failure? An early warning system of failure will suggest whether a company is more likely to fail; a failure predictor model predicts whether a company will fail. Thus, the distinction between the two is that there is a sense of finality with the latter type: if the model states a company will fail, it cannot be saved.

The following table will outline the respective research objectives and their corresponding questions:

Research Objective	Research Question
Evaluate failure trajectory portion of theory of corporate failure	Does Trajectory Analysis meet a set of criteria to evaluate business research? How must trajectory analysis be changed so it meets the criteria?
Evaluate application of the failure trajectory theory using a New Zealand case study	Does Air New Zealand exhibit a failure trajectory in the period 1989 – 2001? Can Trajectory Analysis be used as an early warning system of failure or can it predict company failure?

Table 3.1: Research Objectives

3.1.2 Period of Study

For the purposes of the case study, this thesis will measure the trajectory of Air New Zealand over the period March 1989 – December 2001. It does not seem relevant to include in the period the company's performance before March 1989, when the New Zealand Government owned the company. During the study period, the New Zealand Government did not have a majority equity stake in Air New Zealand. After the

privatisation of Air New Zealand in 1989, the Government had no active participation in the company's operations. A consortium led by the minority owner, Brierley Investments Limited, controlled the company. Thus, to all intents and purposes, Air New Zealand was a new company from 1989, with new owners and new objectives. The period ends at December 2001 when the Government took an 82% equity stake in the company.

The following section will outline the various data sources used in this thesis.

3.2 Data Source

The data sources used in this thesis relate to the New Zealand case study, Air New Zealand Limited. There are three major data sources for Air New Zealand. The first source is Air New Zealand's annual and half-yearly reports. The annual reports cover the entire period from March 1989 – June 2001 (in 1991, the company changed its year-end from 31 March to 30 June). Air New Zealand released half-yearly reports throughout the period. When the company changed its year-end in 1991, it also changed the half-year period end from 30 September to 31 December.

The second source is Air New Zealand's market information, primarily share price data. Whilst there are many databases that hold share price information, this thesis uses the DATEX CD-Rom database. This database provides, amongst other things, New Zealand share price data and company announcements from January 1990 onwards. Air New Zealand's shares began trading publicly on the New Zealand Stock Exchange from October 1989; however, DATEX does not include the share price data from October – December 1989. The share price data produced by a New Zealand newspaper, the National Business Review, is used to collect the shortfall from DATEX.

The third source includes newspaper articles, company announcements and other media concerning Air New Zealand. Occasionally, the thesis will use these sources to elaborate parts of the discussion concerning the company during the period. Consequently, this source is of minor importance compared to the other two sources.

3.3 Summary

This chapter has outlined the research involved in a thorough examination of AMH's failure trajectory theory. There are two main research objectives including firstly, to assess the failure trajectory portion of their theory using a set of criteria for evaluating a theory. The second objective involves using a case study, Air New Zealand, to evaluate the application of trajectory analysis. From these two general objectives, there are also a series of specific research questions.

The period of study for creating Air New Zealand's trajectory is from March 1989, the first financial year the company operated under the new owners, to December 2001, when the New Zealand Government took a majority shareholding because of the company's financial problems. Additionally, the major data sources are Air New Zealand's published financial reports and share price information.

The following five chapters will resolve the above research objectives and questions. Chapter 4 will evaluate the failure trajectory portion of the theory using a set of criteria described in that chapter. Chapter 5 provides additional development to the theory, to resolve some of the criteria found lacking from the theory evaluation. Chapter 6 provides a brief history into Air New Zealand. Chapter 7 will examine Air New Zealand's accounting policies contained in the company's annual reports. Finally, Chapter 8 creates Air New Zealand's trajectory using the revised theory discussed in chapter 5 and incorporating the changes made in chapter 7.

Chapter 4: Evaluating Argenti, McRobert and Hoffman's Failure Trajectory Theory

4.0 Introduction

Chapter 2 outlined the theoretical developments made by Argenti (primarily 1976a) and McRobert and Hoffman (1997). They described a theory of corporate failure, which has had very little empirical testing. Therefore, this chapter will theoretically evaluate the theory, by firstly, discussing the differences between the description of the theory provided by the above authors. Secondly, it will evaluate the theory produced by these authors, to decide whether it needs any further development, before testing it using Air New Zealand.

Section 4.1 outlines the major differences between the description of the theory by Argenti (1976) and McRobert and Hoffman (1997). Section 4.2 splits AMH's theory of corporate failure into two subparts. This is an important step as it limits the amount of AMH's theory the thesis addresses. Section 4.3 evaluates the trajectory analysis portion of the theory of corporate failure using Zaltman, Pinson and Angelmar's (1973) 16 criteria for theory evaluation. A summary follows in Section 4.4.

4.1 The Differences between Argenti's (1976a) description, and McRobert and Hoffman's (1997) description of the theory

Section 2.3 mentioned that McRobert and Hoffman's (1997) description of the theory was very similar to Argenti's (1976a). However, there are some differences between the two. Table 4.1 summarises the differences between the two theories. Some of the important differences will be discussed in detail below.

There are two major differences between the terms defined by AMH. Firstly, their failure definitions differed. Argenti (1976a) provided a narrow definition whereby failure occurred when the company went into liquidation or receivership, or ceased to

trade. By contrast, McRobert and Hoffman's (1997) provided a broader definition (see above, p. 25). Chapter 5 will discuss these definitions further. Additionally, the authors each use the term's 'health' and 'well-being' in the trajectory definition. However, it seems that both terms mean substantially the same thing[15].

What Argenti (1976a) Says	**What McRobert and Hoffman (1997) Says**
Definitions	
Failure equated with receivership	Failure equated with not meeting the stakeholders minimum return
Uses the term 'general health' in the Trajectory Definition	Uses the term 'corporate well-being' in the Trajectory Definition
Provides a definition of 'collapse'	Does not define 'collapse'
Causes and Symptoms of Corporate Failure	
Has only six management structural defects	Has an additional two: 'inadequate strategic understanding' and 'success in any business'
Does not define 'lack of management depth'	Provides a definition for 'lack of management depth'
Accounting information defect includes 'valuation of assets'	Accounting information defect includes 'a system of internal controls'
Emphasises five different types of change: social, economic, political, competitive, technological	Emphasis two different types of change: social and economic
Emphasises one type of 'overtrading' (increasing sales at the expense of profit margins) as being more important in failing companies than the other type (overtrading leading to over borrowing)	Both types of overtrading are equally important
Only provides a couple of 'non-financial symptoms'	Lists many 'non-financial symptoms', although some are specialised
Notes the adverse effect of inflation upon financial ratios	No mention of an inflation effect in text
'Creative Accounting' hides the extent of company problems	'Cosmetic Accounting' deliberately misleads the observer
The 'last few months' is a symptom of corporate failure in its own right	The 'last few months' is included as a non-financial symptom
No mention of 'cash flow analysis'	Highlights 'cash flow analysis' as a reliable early indicator of failure
Measurement of the Trajectory	
'Normal Business Hazards' is included in the	'Deterioration in Cash Flows' is included in the

[15] Chapter 5 discusses further this concept.

story-line of failing companies	story-line of failing companies
No mention of management manipulation (or lack of it) for general health indicators	Notes that indicators of corporate well-being are more difficult to manipulate by management
The Trajectory line is a subjective construction	Does not mention how to construct the Trajectory line, except it is not constructed mathematically
Application of Trajectory Analysis	
There maybe more than three types of failure trajectories	There are only three types of failure trajectories

Table 4.1: Differences between Argenti (1976a) and McRobert and Hoffman (1997)'s theories

Many of the differences in table 4.1 relate to the causes and symptoms of corporate failure. McRobert and Hoffman (1997) have provided a greater amount of information concerning management defects. They included two additional management defects, 'inadequate strategic understanding' and 'success in any business', and defined 'lack of management depth'. These additions have aided the breakdown of management defects, which is the most fundamental and important cause of corporate collapse.

The lack of accounting information defect has only one difference between the authors: Argenti (1976a) emphasised 'valuation of assets' whereas McRobert and Hoffman (1997) suggested 'a system of internal controls' as information defects in collapsing companies. Of the two, McRobert and Hoffman (1997) provided the appropriate type of accounting information. Poor asset valuation is not in itself a cause of corporate collapse. It can be used to manipulate accounting information, and is more appropriately included in the creative accounting symptom. Poor internal controls however, can allow management to circumvent company procedures and increase their own effective control of the company. Theft and fraudulent activities are very possible in a company with poor internal controls. Therefore, internal control systems are a valid cause of corporate collapse.

Argenti (1976a), and McRobert and Hoffman (1997) provided a different discussion of non-financial symptoms. Argenti (1976a) provided very few symptoms, and then commented that every company collapse will have different non-financial signs of collapse. McRobert and Hoffman (1997), by contrast, discussed at least a dozen types

of non-financial symptoms; many are only usable by people in specialised positions. Some signs are also financial symptoms of collapse[16]. Here, Argenti (1976a) had the more appropriate reasoning. He suggested that interested parties should examine a company for any relevant non-financial sign of collapse. McRobert and Hoffman (1997) provided a distinct group of non-financial signs; however, concentrating on these signs may cause the omission of a sign that the McRobert and Hoffman (1997) did not contemplate.

Both separate theories highlight the importance of identifying creative accounting. However, they provide different names for this symptom. Argenti (1976a) stated that all types of creative accounting can be used to hide company problems. McRobert and Hoffman (1997) distinguished between creative and cosmetic accounting (see above pp. 28 – 29). In this case, it is just the case of calling the same symptom by a different name; both authors are only interested in accounting techniques that somehow mask the actual performance or position of a company.

Argenti (1976a) did not mention cash flow analysis as a symptom of company failure. McRobert and Hoffman (1997) highlighted cash flow analysis as a reliable early indicator of failure, and provided their own method of analysing cash flow[17]. Possibly, Argenti (1976a)'s lack of interest stems from the difficulty of measuring the cash flows when he wrote his book; cash flow statements only became standard practice from 1987.

There are very few differences between the authors trajectory analysis portion of the theory. In many circumstances, they are very vague in the application of this portion of the theory, although chapter 5 covers this in more detail. The major difference is on how the trajectory line is constructed. Argenti (1976a) argued for a subjective construction. McRobert and Hoffman (1997) stated that the trajectory line should not be constructed objectively, but did not expressly discuss how to construct the

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[16] Two mentioned by McRobert and Hoffman (1997) are 'financial statements' and 'cosmetic accounting'.

[17] McRobert and Hoffman (1997)'s method involves the use of a spreadsheet. This is an analysis calculating the operating cash flow using the indirect method, listing finance and investment needs, listing how the company funds its needs, and calculating the actual cash increase or decrease over the year in question.

trajectory line. Since McRobert and Hoffman (1997) discounted an objective construction, this only leaves some type of subjective construction. By not stating this, McRobert and Hoffman (1997) left a question mark on how a person will construct the trajectory.

The last difference is on the number of failure trajectories. McRobert and Hoffman (1997) are adamant that only three trajectories exist. Argenti (1976a) contradicted himself by firstly stating that three trajectories will explain all company failures and then suggesting that some companies will fail after never following any of the failure trajectories. Ignoring Argenti (1976a)'s apparent contradiction, the authors are both stating a similar idea: that three trajectories explain all company failures.

The are many differences between Argenti (1976a) and McRobert and Hoffman's (1997) description of the theory. However, the general propositions of their theory is clear. The following section will introduce the two parts of AMH's theory of corporate failure.

4.2 The subparts of Argenti, McRobert and Hoffman's theory of corporate failure

Philosophers (for example, O'Hear, 1989) have argued that there are two major types of theories: explanatory and predictive. Explanatory theories explain why certain events happen; they do not try to predict when it will happen. By contrast, predictive theories will state whether an event will happen, or what needs to happen for the event to occur. It is not necessary for a predictive theory to explain why the event happens; its only interest is whether it happens[18]. These types of theories are not independent; a theory can have both predictive and explanatory power.

[18] O'Hear (1989) provided a simple example of a predictive theory in terms of an owl sitting on a flagpole and looking at a mouse. He noted that, by using Pythagoras' Theorem, one can predict the distance from the mouse to the owl, when we know how far the mouse is from the flagpole the owl is on. Thus, Pythagoras' Theorem has predictive power. It has very little explanatory power; we would not say that the theorem explained the distance of the mouse to the owl (O'Hear, 1989, p. 9).

AMH's theory of corporate failure seems to have both explanatory and predictive power. Indeed, we can split the theory into two particular sub-theories: one that predicts which companies fail, the other predicts when companies fail.

Sub-theory 1 identifies what makes a company fail; that is, the causes inherent in the company's business structure and the symptoms that the company exhibits as it moves towards failure. This theory proposes the most likely causes and symptoms that best discriminate between companies that fail and those that do not. All causes and symptoms stem from one major cause, defects in the company's management structure. This sub-theory has both explanatory and predictive power; it states how and why a company fails and it predicts which companies will fail. However, it does not predict when companies fail.

Sub-theory 2 concerns the trajectory analysis portion of the theory of corporate failure. AMH proposed three types of trajectories companies can follow when they fail. All of the trajectories are measured over time; the relevant period is from when the company begins to collapse to when the company fails. The theory uses several indicators to illustrate the trajectories; these indicators are qualitative, quantitative, financial and non-financial. This is a predictive theory. It predicts if a company will fail; it does not explain how or why it fails.

The remainder of this chapter will discuss sub-theory two. The objective of this thesis is to examine AMH's failure trajectory portion of their theory. The following section will evaluate whether this portion of their theory needs further development before being applied to Air New Zealand.

4.3 Evaluating the failure trajectory portion of the theory of corporate failure

This section will evaluate how testable trajectory analysis[19] is in its current form. As was mentioned in chapter 2, AMH did not create a trajectory using actual data (real or

[19] Hereafter, when discussing Argenti (1976a), and McRobert and Hoffman's (1997) failure trajectory portion of their theory of corporate failure, this thesis will use the term "trajectory analysis".

hypothetical). Instead, they relied on anecdotal evidence to illustrate each trajectory. Therefore, it seems appropriate to evaluate trajectory analysis, as summarised in sections 2.1 and 2.3, to determine whether it can be applied to create a company's trajectory.

Table 4.2 reproduces Zaltman *et al.'s* (1973) 16 criteria for theory evaluation. They determined their criteria from an examination of the literature, although they based their criteria largely on work done by Bunge (1967a; 1967b). One point of note is that Zaltman *et al's* (1973) subject area was consumer research. However, because they drew their criteria from the literature, their criteria are sufficiently broad enough to be used to evaluate trajectory analysis. From their discussion of each criterion, Zaltman *et al.* (1973) viewed these two criteria as absolutely necessary for a good theory: internal consistency and empirical interpretability. The following paragraphs will expand on some of the criteria to evaluate trajectory analysis (assume that a given criterion is met if it is not discussed).

The second criterion is internal consistency. A theory should contain no logical contradictions. AMH's trajectory analysis theory contains three contradictions. One contradiction involves their definitions of failure. Each author has defined failure differently; however, they both contradicted themselves when defining the failure state of general health (corporate wellbeing) as when a receiver is appointed. This differs from both their definitions. The second one involves Argenti's (1976a) belief that three trajectories explain all failures, whilst also stating that many failures will happen without moving down the trajectories. The final contradiction involves the measurement of the trajectory. AMH state that corporate indicators (such as profit and turnover) do not represent the trajectory. However, one of their indicators is calculated using a profit figure (return on capital). These contradictions mean that trajectory analysis does not meet criterion 2.

Formal Criteria	
1. Well-formedness	The theory obeys the rules of "formation" and "transformation" (elementary logic).
2. Internal Consistency	The theory contains no logical contradictions.
3. Independence	The theory has primitive-concepts independence and axioms independence.
4. Strength	The theory entails other theories.
Semantical Criteria	
5. Linguistic exactness	The theory exhibits minimum intensional and extensional vagueness.
6. Conceptual unity	The components of the theory refer to the same set of behavioural phenomena.
7. Empirical interpretability	The theory is operationalisable (interpretable in empirical terms).
8. Representativeness	The theory deals with deep mechanisms.
Methodological Criteria	
9. Falsifiability	The theory is falsifiable – that is, confrontable with reality (facts).
10. Methodological simplicity	The theory is easy to build and test.
Epistemological Criteria	
11. Confirmation	The theory coheres with facts.
12. Originality	The theory increases knowledge by deriving new propositions.
13. External consistency	The theory is consistent with existing knowledge.
14. Unifying power	The theory connects previously unconnected items.
15. Heuristic power	The theory suggests new directions for research.
16. Stability	The theory is able to accommodate new evidence.

Table 4.2: Sixteen criteria for theory evaluation

Source: Zaltman, Pinson and Angelmar (1973), table 5.3, p.104.

AMH have not defined several terms. Firstly, they have not defined 'general health' or 'corporate wellbeing', what the trajectory is measured against. Additionally, there are five different states of financial health or corporate wellbeing. Only one of these states (failure) has been defined and distinguished from the others. Secondly, they have not defined 'indicators' or 'factors', the items that are meant to measure the trajectory. A sub-set of indicators and factors is 'corporate indicators', which should not be used to shape the trajectory. All these undefined terms mean that the theory does not meet criterion 5, linguistic exactness.

Criterion 7 expects the theory to be empirically interpretable. In other words, a theory must be able to be tested in some way, whether it is by experiment, case study or in some other way. As trajectory analysis currently stands, this is not possible. Let us assume to satisfy criterion 2, return on capital is not used to shape the trajectory, only the other four indicators could be used. Furthermore, assume that the company evaluated using the trajectory does not have a share price (that is, it is not publicly tradable) and thus, no stock market share value. Thus, the three non-financial indicators would evaluate this company's trajectory. The problem here is how to measure the non-financial indicators using publicly available information. If they cannot be measured using publicly available information, nothing suggested by trajectory analysis can shape the trajectory. Even if the non-financial indicators could be measured, how are they combined into the trajectory? AMH only stated that the trajectory would be subjectively merged; this comment provides no real guidance on how to do so. Therefore, trajectory analysis does not meet criterion 7, because the theory is not currently operational.

The trajectory analysis theory did not meet three criteria, including two that are very necessary for a good theory. Clearly, trajectory analysis needs further development before it can used to evaluate whether a company is failing and what trajectory the company is travelling on as failure approaches. Specifically, the theory has to have the contradictions removed, it needs several terms defined, and finally, it needs to be made operational.

4.4 Summary

This chapter has evaluated AMH's trajectory analysis. There are many differences between the respective authors description of the theory of corporate failure. Some of these apply to trajectory analysis, and cause problems when evaluating trajectory analysis using Zaltman, Pinson and Angelmar's (1973) criteria. In evaluating trajectory analysis against the sixteen criteria, it was found to be lacking in three criteria. Consequently, trajectory analysis needs further development before it can be empirically used. The following chapter will develop trajectory analysis to satisfy the three criteria. Thus, chapter 5 will resolve the inherent contradictions in trajectory analysis, provide definitions for the terms left undefined by AMH, and make trajectory analysis operational.

Chapter 5: Trajectory Analysis for a more Complex Age

5.0 Introduction

The previous chapter evaluated trajectory analysis. It found that AMH's trajectory analysis theory did not meet three of the sixteen criteria in applying Zaltman *et al's* (1973) theory evaluation test. As two of the three criteria are necessary to produce a good theory, they all have to be corrected before a trajectory can be produced. This chapter will develop trajectory analysis to satisfy the criteria found lacking in applying Zaltman *et al's* (1973) theory evaluation test.

This chapter is structured to discuss the three criteria the theory did not meet: linguistic exactness, internal consistency and empirical interpretability. Thus, Section 5.1 will provide definitions for the terms undefined by AMH. Section 5.2 evaluates the number of failure trajectories and whether corporate indicators should be used to shape the trajectory. Section 5.3 develops trajectory analysis into an operational theory. A summary follows in section 5.4.

5.1 Definitions for undefined terms

AMH did not define several terms. In doing so, they made trajectory analysis so vague that it would be difficult to use. This section provides definitions for the following terms: 'general health' or 'corporate wellbeing', the five states of general health or corporate wellbeing, the 'indicators' or 'factors' that shape the trajectory, and 'corporate indicators'.

5.1.1 Definition for financial health (corporate wellbeing)

The authors have not defined either one of these terms in their texts. In the previous chapter, it was suggested that they both meant the same thing. Possibly, AMH meant the every-day use for these terms. For each of these terms, dictionary definitions have been provided:

- Health: the overall condition of an organism at a given time, freedom from disease or abnormality. A condition of optimal wellbeing.
- Wellbeing: the state of being happy, healthy or prosperous[20].

From the above definitions, the idea of what the authors mean by health or wellbeing is becoming apparent. For the purposes of the present discussion, we can equate general health with the general condition of the company; corporate wellbeing relates to the state of being healthy and prosperous. Since the term's "health" and "wellbeing" are synonyms, the belief that AGM were discussing the same concept is correct. Therefore, company health[21] relates to the general prosperity of the company. The more prosperous a company is, the healthier the company, and the more positive the trajectory.

5.1.2 Distinguishing the five states of company health

There are five states of company health: failure, poor, good, excellent and fantastic. However, AMH provided little detail on how to distinguish between any of the states. AMH distinguished only the state of failure. Company failure only happens when the receiver is appointed in (Argenti, 1976a, p. 153; McRobert and Hoffman, 1997, p. 105). The state of failure would also include the situation occurring when the company is placed into liquidation or made insolvent (the terms differ depending upon the legal system). McRobert and Hoffman (1997, p. 105) also asserted that the state of fantastic is very rare. Nevertheless, how can one distinguish the other states?

There are two logical methods of distinguishing between the states of company health. One method would be to distinguish them based upon a company's performance in relation to its competitors and/or applicable industry averages. The second method would distinguish the different states of company health based upon a company's actual performance over time.

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[20] These definitions are taken from Dictionary.com.

[21] The remainder of this thesis will use the term "company health" when discussing the health/wellbeing of a company.

The second method is useful when the company does not have major competitors or industry averages. Companies in this situation include large domestic monopolies or firms that dominate their market. A New Zealand example is Telecom Corporation of New Zealand Limited, which has at least an 80% share of the market.

Table 5.1 sets out how to distinguish each state of company health using the two suggested methods[22]. As in the case of the definition of company health, AMH probably refer to the common meanings for each state of company health. The table has applied the common meanings when distinguishing each state of company health.

State of Company Health	Distinguishing Characteristics
Failure	Occurs when the receiver is appointed. Alternatively, when a stakeholder places a company into liquidation or it is discontinued in some other way.
Poor	The company performance is worse than major competitors or industry averages. Alternatively, it has negative cumulative cash flows or profits and share market performance is worse than the stock market.
Good	Company performance is on par with competitors and industry averages. It has stable performance: return on capital is consistent over time, share market performance is similar to the market index, and cumulative profits and cash flow will be positive.
Excellent	The company exceeds industry averages or competitors. Company growth (measured by profits, cash flow, turnover, etc.) is greater than inflation. Return on capital increases compared to previous periods. Share market performance exceeds the market index
Fantastic	The company's performance seems unreal compared to its competitors/industry. For example, the company enjoys profits and positive cash flow whilst its competitors in the industry make losses. Alternatively, the company breaks and continues to break their performance records.

Table 5.1: Distinguishing each state of company health

Notwithstanding McRobert and Hoffman's comments, it is clear that every state (apart from failure) of company health is reachable many times. Companies exist in a

[22] For the purpose of these examples, each state of health is distinguished using financial information. The nature of how financial performance is used to distinguish good performing companies from poor performing companies makes it the obvious choice to distinguish each state of health.

cyclical economic environment and during the booms and recessions, their performance will change. A company may enter the fantastic state during a boom, fall to a lower state during the subsequent recession and recover to reach the fantastic state again in the following boom.

5.1.3 Definition of indicators (factors)

Argenti (1976a) used to term 'indicators' to describe the items that should shape the trajectory. By contrast, McRobert and Hoffman (1997) used two terms, indicators and 'factors'. Obviously, while not defining either term, McRobert and Hoffman's (1997) interchange of the terms suggest that they mean the same thing.

AMH mentioned five items that are indicators: return on capital, stock market share value, employee morale, relationship with customers and reputation with suppliers. These items include accounting, market and non-financial information. Expanding on these items, 'indicator' seems to relate to anything that can measure company health. It would therefore include the financial results (summarised in their annual reports), market information (such as share prices and market values), and any non-financial, qualitative, information concerning the operations of the company. Because of its generality, indicators should include both publicly available and private information, although only publicly available information will be available to analysts.

McRobert and Hoffman (1997) introduced 'corporate indicators'. Examples provided for this sub-set of indicators included profits and turnover. It seems what they referred to here would be accounting information: data created by accountants and affected by changes in accounting policies. Thus, following this reasoning, all corporate indicators would be created by accounting information, most likely summarised in their annual reports.

Additionally, two other sub-sets of indicators are possible. The first sub-set is market indicators, made up of all share market information. The second sub-set is non-financial indicators, which includes all non-financial, qualitative information.

5.1.4 Summary

This section has dealt with improving the trajectory analysis theory's linguistic exactness. It defined several terms, including company health (what the trajectory is measured against) and indicators (what measures the trajectory). Finally, the five states of company health have been detailed to provide a blueprint to determine when the trajectory moves into a new state of company health.

5.2 Contradictions in trajectory analysis

This section deals with the contradictions contained in AMH's theory. The first contradiction involves the definition of failure. The second one regards how many failure trajectories are needed to explain all failures. The third contradiction concerns whether corporate indicators shape the trajectory.

5.2.1 The definition of failure

As discussed in chapter 4, Argenti (1976a), and McRobert and Hoffman's (1997) definitions of failure differed. Their contradiction occurred when AMH stated that the failure state of company health happened when the receiver was appointed (which differed from both definitions). This subsection will resolve the contradiction by determining which definition of failure is most appropriate in the theory.

Tobin (1996) noted that different studies have defined failure at different points in the corporate distress process. These definitions included periods of poor profits, falling market share and bankruptcy (see Tobin, 1996, pp. 14 – 15; Altman, 1968; Hambrick and D'Aveni, 1988; Morris, 1997). Morris (1997) went as far as to include the resignation of directors, a cut in dividends or the reporting of profits below forecast in his meaning of failure. Therefore, definitions vary from the very narrow (that is, bankruptcy) to the broad (Morris', 1997, definition).

It seems appropriate to define failure in a way that it is generally consistent with other studies. Thus, it would be the narrow definition of bankruptcy (Tobin, 1996).

Bankruptcy can be equated with the appointment of a receiver, since in both cases the company can continue to trade, restructure or be liquidated (*ibid.*). Thus, the definition of failure for the purposes of trajectory analysis is at the point of appointment of a receiver or when a company becomes bankrupt. The definition would also include liquidation, or a discontinuation in some other way. As such, the definition is similar to Argenti's (1976a) than to McRobert and Hoffman's (1997).

The choice of this definition also removes the contradiction mentioned above. This is the same definition given to distinguish the failure state of health from the other states (see section 5.1.2).

5.2.2 The number of failure trajectories

Chapter 2 outlined AMH's view to the number of trajectories that a company can follow when it fails. They stated that there are only three trajectories; however, Argenti (1976a) contradicted this view when he stated that companies would fail without following any of the trajectories. To resolve this contradiction, this subsection will examine whether more than three trajectories could exist, and therefore whether the theory is falsifiable (criterion 9 of Zaltman *et al's*, 1973, criteria for theory evaluation).

Trajectory analysis states that there are three, and only three, failure trajectory types. Two of them involve newly formed companies, whereas the final trajectory type concerns mature companies (see above, pp. 14 – 17). Given this simplistic view, it seems apparent that there would be many more failure trajectories. For example, any mature company that suddenly fails without experiencing an initial collapse will not follow any of the proposed trajectory types. This mature company certainly does not conform to a Type 1 or Type 2 trajectory since it is not a young company; it does not conform to a Type 3 trajectory because there is not an initial collapse before failure. This could be a 'Type 4' failure trajectory.

However, the trajectory does not have to conform precisely to one of the types (see above, pp. 17, 31). What this means is that any company that looks to follow a trajectory is on that trajectory. All companies that suddenly fail, regardless of their

age, will follow a type two trajectory. Any company that remains upon a plateau before failing is a type three trajectory. The above example of a 'Type 4' trajectory is only an offshoot of the Type 2 trajectory.

Nevertheless, the comments in the preceding paragraph are not entirely correct. For a company to follow a type two trajectory, the company must be incredibly successful immediately before the downslide towards failure. Not all mature companies will fail this way; neither will they all follow the Type 3 failure company. This leads us to the question of the mature company that has been reasonably successful yet collapses. Figure 5.1 provides an example of this type of failure. Does this mean that the theory is wrong, and another failure path exists? It is possible, however to include a fourth trajectory type, a company would need to fail in a way similar to that given in figure 5.1.

The purpose of Argenti's (1976a) contradiction was to ensure that trajectory analysis was falsifiable and stable (criterion 16). The discussion above indicates that there may be more than three failure trajectories. His contradiction was to explicitly state that the number of trajectories could grow. If a fourth trajectory existed, the theory is stable enough to include that additional evidence. A less confusing way to state that the theory is falsifiable is summarised in the following paragraph.

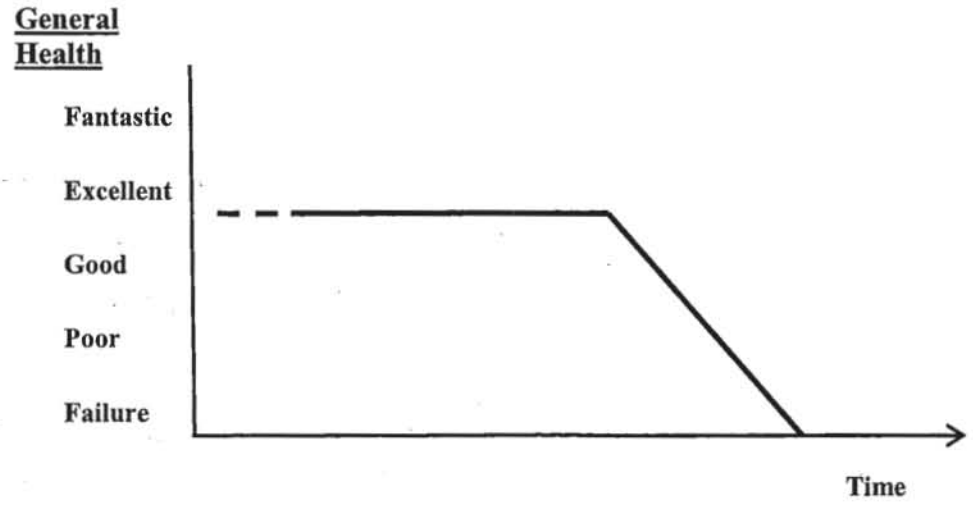

Figure 5.1: Hypothetical Type 4 failure trajectory

Based on the current evidence (Hambrick and D'Aveni, 1988; Laitinen, 1991), only three failure trajectories exist. However, while more trajectories may exist, there is no actual evidence to prove the existence of another trajectory type. Therefore, the theory needs only to include the currently known trajectory types.

5.2.3 Should corporate indicators shape the trajectory?

The third contradiction concerns the usefulness of corporate indicators to shape the trajectory. AMH stated that no corporate indicators shape the trajectory, although they then use one (return on capital). Section 4.3 suggested that, ignoring corporate indicators that measure the trajectory, no indicators would shape the trajectory in some situations[23]. This subsection will resolve this contradiction.

Why are corporate indicators excluded from trajectory analysis? According to AMH, this is because they are subject to annual fluctuations and affected by creative accounting techniques (see above, pp. 14, 30). If each problem can be resolved, corporate indicators can shape the trajectory.

Firstly, in examining annual fluctuations, contrary to AMH's beliefs, annual fluctuations should add to the analysis. The trajectory changes based upon changes in company health, which is affected by annual fluctuations in the performance of the company. Annual fluctuations indicate a change in the state of company health; an upward trend in annual fluctuations would indicate a positive change to company health and vice-versa. In effect, annual fluctuations create the shape of indicators, and therefore, the trajectory.

The second problem with corporate indicators is how creative accounting techniques affect them. AMH argued that a company would employ creative accounting to mask falling performance (Argenti, 1976a, p. 142; McRobert and Hoffman, 1997, p. 89). Can analysts identify and adjust for creative accounting techniques?

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[23] Companies affected include ones that do not trade on a stock exchange and do not release any information concerning the non-financial indicators.

Smith (1996) seems to think so. Terry Smith wrote a book, targeted to non-accountants, which identified particular creative accounting techniques and suggested 'survival techniques' to identify creative accounting. He summarised all forms of creative accounting into one of the following four categories: inflating reported profits, reporting profits at the expense of the balance sheet, reporting profits without an equivalent amount of cash, and lowering reported borrowings.

To identify creative accounting techniques, Smith (1996) suggested reading the accounts backwards (that is, read the notes to the accounts before the financial statements) and to read the accounting policies. The second point is interesting; he does not suggest this to check for compliance with generally accepted accounting principles, but to see whether any changes in accounting policies increase profits.

To expand on Smith's (1996) argument, anyone can examine an annual report and its financial statements for creative accounting techniques. Instead of concentrating on just the financial statements, an analyst should read the accounting policies for changes in policies that increase profits or remove liabilities from the balance sheet. Additionally, it would involve adjusting these changes by reversing the appropriate journal entries (for profit policy changes) or creating journal entries to bring them on balance sheet (for liability policy changes).

The major difficulty with this process is that it negatively affects Zaltman *et al's* (1973) criterion 10. An examination of a company's annual report for creative accounting techniques, and adjusting the data for them, means a much more time-consuming and difficult theory to build and test. However, it ensures that any corporate indicators that shape the trajectory can be relied on to be not affected by creative accounting.

5.2.4 Summary

This section has discussed the three major contradictions in trajectory analysis. The first contradiction is resolved by redefining failure so that it is broadly in line with other researchers. In doing so, the general definition of failure is the same as that given for the failure state of company health. The second contradiction is resolved by

acknowledging that more than three failure trajectories could exist. However, current evidence (including Laitinen, 1991; Hambrick and D'Aveni, 1988) only suggests the three trajectories defined by AMH. The final contradiction is resolved by removing the proposition that corporate indicators will not shape the trajectory. Instead, corporate indicators will be evaluated and adjusted for any creative accounting techniques. If the corporate indicators are not affected by creative accounting, they can be used to measure the trajectory.

5.3 Developing trajectory analysis to be operational

This section details how to make the theory operational, by discussing three areas of interest. These are the following (each discussed in their own subsection):

1. what will measure the trajectory;
2. how to measure each indicator;
3. how to create the trajectory.

5.3.1 What will measure the trajectory?

AMH suggested five indicators to shape the trajectory: return on capital, stock market share value, employee morale, reputation with customers, and relationship with suppliers. They chose these indicators because they were more difficult to conceal. This subsection will outline what indicators should shape the trajectory, having regard to one limiting factor: the indicator must be calculable using publicly available information. If the indicator is not calculable using publicly available information, only certain people who have access to the data to calculate the indicator could create the trajectory, thereby making trajectory analysis less operational. The subsection will deal separately with each major indicator subset and suggest the indicators that will be used in this thesis to calculate the trajectory.

5.3.1.1 Corporate Indicators

Generally, a company with good performance creates both profits and cash. However, only a profit measure is currently included as an indicator. This is strange,

considering that AMH argued how useful cash flows are as an early detection of failure. Furthermore, cash flow is less affected by creative accounting techniques (Smith, 1996, p. 189). It is appropriate to include a cash flow indicator, because it is fundamental to the survival of any company, less affected by creative accounting techniques and advocated by AMH.

This thesis advocates the Operating Cash Flow after Interest and Dividends (OCFAID) method (Robb, 1999; Robb and Lewis, 2001) to measure both the cash flow and profit changes. This process involves calculating the profits and cash flow retained by the company; effectively, adjusting for any distributions made to the stakeholders. To allow for trend analysis, the process cumulates cash flows and profits over time.

The third advocated corporate indicator is the debt to equity ratio. This ratio evaluates the financial risk of the company. Generally, a company with more debt is riskier than a comparable firm with less debt is, as the former have to earn more to meet their interest payments. The formula is the simple total debt divided by total equity version, because in a failure situation "*it does not matter whether the debt is long or short – only the overall amount of debt*" (Robertson, 1983, p.26).

Return on capital employed (ROCE) is the final advocated corporate indicator. This indicator is calculated by dividing profits before interest and tax by capital employed (the formula suggested by Argenti, 1983; 1984). This indicator uses an operating profit measure, rather than the consolidated after-tax profit measure used by the OCFAID analysis.

5.3.1.2 Market Indicators

AMH advocated using the stock market share value (SMSV) to shape the trajectory. To calculate SMSV, simply multiply the share price with the total number of shares issued. Other possible market indicators are the share price (which is not influenced by the number of issued shares) and the Price to Earnings (P/E) ratio (calculated by dividing the share price by the earnings per share (EPS)).

The reasoning behind the use of SMSV and the share price is simple: an increasing share price (SMSV) means that the market believes that the company is improving, and vice-versa. However, this is not always the case: share price dilution can occur because of bonus shares and share splits, the SMSV may not show major decreases in the share price, precisely because of increases in issued shares. Therefore, this thesis advocates using both SMSV and the share price to measure the trajectory. SMSV will provide the total market value of the company and the share price will evaluate the market's rating of the company without the influence of the number of shares issued.

This thesis does not advocate the use of the P/E ratio for two reasons. Firstly, there are differing opinions regarding what the ratio measures: it has been described as a measure of future performance or the time it will take the company to recover the shareholder's investment (M^{c}Kenzie, 1998). Secondly, the ratio can become very large: for example, if a company's EPS is close to zero and the share price remains unchanged, the P/E ratio will approach infinity. Based on how the trajectory is calculated (see section 5.3.3), this would produce a spike in the trajectory.

5.3.1.3 Non-financial Indicators

AMH advocated three non-financial indicators. However, the major problem with non-financial indicators is in their measurement. If they cannot be measured with publicly available information, we effectively cannot measure them. Publicly available proxies are available to estimate these non-financial indicators; however, they will not provide exact measurements of these indicators, simply because they are only proxies.

This thesis does not advocate the use of non-financial indicators for the following reasons. Firstly, they are too problematic and difficult to measure. It is too time consuming to individually measure each non-financial indicator, negatively affecting criteria 7 and 10. Secondly, the best measurement of non-financial indicators requires the use of privately available information. Thirdly, non-financial indicators are difficult to interpret. For example, what does good morale mean? It is definitely not that clear-cut: Argenti (1976a) discussed this by pointing out that low morale is a

symptom of a failing company, but can also exist in a successful company. However, even a company close to failure can have high morale (Argenti, 1976a, p. 144).

In summary, there are six indicators advocated in this thesis to shape a company's trajectory. These are the following: cumulative OCFAID, cumulative retained earnings, ROCE, debt to equity ratio, stock market share value, and the share price.

5.3.2 How to measure each indicator

The indicators discussed above can be calculated in a variety of ways. This subsection will outline the methods used in this thesis to calculate each of the indicators. Obviously, for the corporate indicators, the financial reports produced by the company will contain most of the needed information. The market indicators are obtainable from databases that contain historical share prices. A database that contains most New Zealand companies share prices from 1990 is DATEX.

With respect to the financial indicators (debt to equity ratio, cumulative retained earnings, cumulative OCFAID, and ROCE), there are two available techniques for measurement: using the information contained in the financial statements, or to use that information plus the information disclosed in the notes of the accounts[24]. This thesis advocates using both techniques. Firstly, calculate the indicators using only the financial statements. Secondly, calculate the indicators using the financial statements after adjusting for information contained in the notes to the accounts. Using both measures will allow us to capture the difference between the company's "best-case" position (assumed to be what is reported in the financial statements) and the possible "worst-case" position (after making the changes for off-balance sheet items). Unfortunately, this method adversely affects Zaltman *et al's* (1973) criterion 10, making the theory more difficult to test.

The market indicator (SMSV and the share price) is easy to calculate if the company's shares are publicly tradable on a stock exchange. The company's primary stock

[24] This information may be additional disclosure required by accounting standards, or voluntary disclosure made by the company. Typical disclosure includes market values of assets or off-balance sheet items that could be termed liabilities.

exchange should be used to calculate the indicators if the company trades on more than one exchange. However, what happens if the company's shares are not publicly tradable? Only a small percentage of companies are publicly tradable on a stock exchange. The remainder are either privately held companies or owned by the Government. These companies do not have any market share price data and cannot easily produce the market indicators.

This thesis proposes two solutions to this problem. The first is to use finance techniques to calculate a proxy about the company. The process involves firstly, finding a comparable publicly traded company to the non-traded company. Then calculating certain finance variables from the publicly traded company. Finally, adjusting the variables for the non-traded company's risk factors, and use those to calculate a proxy share price. The process is well covered elsewhere (for example, Damodaran, 1997). The second solution is to discard the market indicators altogether and concentrate on the corporate indicators. This thesis advocates the second solution only if the other indicators are well measured, or if calculating the proxy proves too difficult.

This section outlines the major methods used to measure the indicators. Financial information is straightforward to obtain, as it is available from the annual reports. However, for each corporate indicator, there is a best-case and worst-case scenario. Market information is easy to determine as long as the company is publicly tradable; if it does not trade on the market, the calculations can be very difficult.

5.3.3 How to calculate the trajectory

Trajectory analysis stated that the trajectory is subjectively created from all the measurers of company health. The trajectory cannot be objectively created using some type of universal mathematical formula. This subsection describes the process used in chapter 8 to create Air New Zealand's trajectory.

The first step will be to calculate the indicators as described in the previous subsection. This will result in three sets of data: the market indicators, the best-case corporate indicators and the worst-case corporate indicators. Because there are two

sets of corporate indicators, it will be appropriate to create two interim trajectories. The first trajectory will be the "best-case" scenario, calculated using the market and best-case corporate indicators. The second trajectory will use the market and worst-case corporate indicators to calculate the "worst-case" scenario. A mid-point between the two extremes will be the final trajectory. How to calculate the trajectory line is provided below.

The second step will be to create the trajectory line. This process will involve standardising the indicators. Firstly, standardise all the indicators to one base year. The standardised amount is 100. The base year should be the first period that every indicator is calculated. Secondly, for each period, calculate the average of the indicators: the graph of the resulting amounts will be either the best-case or worst-case scenario trajectory line. Thirdly, calculate the average of the two interim trajectory lines. The resulting amounts will be the final trajectory.

Whilst this is a simple way of calculating the trajectory, the process discussed above suffers from a major fault. The process ignores the possibility that certain indicators are more important than the others as failure approaches (Sheppard, 1994). For example, cash flow is fundamental to company survival; if a company cannot create cash, it will ultimately fail. Therefore, it seems appropriate that OCFAID (the cash flow measure) would be the most important indicator.

A weighting system for the company indicators would eliminate the fault discussed in the previous paragraph. Weighting each indicator will adjust them for their relative importance. A higher weight can be given to a more important indicator, which would allow that indicator to have more influence on the trajectory.

The weights would have to be determined subjectively. There are two reasons for subjectively created weights. Firstly, it would satisfy the requirement in the theory that the trajectory is subjectively created. Secondly, any objective method used to create the weights has validity problems. The weights would be valid only for the period they were created for. For example, Altman's Z score model used data from 1946 – 1965 to calculate his model (Altman, 1965). The weights used in his model

are valid for investigating failure only during the period 1946 – 1965. The weights cannot be generalised to other periods, and are not valid outside of the United States: Altman's (1965) period of study. There are several other problems with an objective method, which have been discussed elsewhere (Robertson and Mills, 1991b).

It is not an aim of the thesis to produce universal weights for calculating the trajectory. It falls outside of the scope of the thesis. To provide these types of weights would require the use of a sample of failed and non-failed companies. Nevertheless, a sensitivity analysis, contained in chapter 8, will investigate the affect of different weights on Air New Zealand's trajectory.

5.3.4 Summary

This section improves trajectory analysis's empirical interpretability. Six indicators shape the trajectory; each is measurable from publicly available information. The three non-financial indicators advocated by AMH were removed because of the difficulty of measuring them using non-financial data. A method to calculate each indicator is suggested, resulting in two sets of data: a best-case and a worst-case scenario. Finally, this section provides a method to measure the trajectory. This method involves standardising the indicators to a common amount and averaging them to produce the trajectory.

5.4 Summary

This chapter re-examined AMH's trajectory analysis theory to correct the portions of the theory that did not meet Zaltman *et al's* (1973) criteria. The criteria were linguistic exactness, internal consistency and empirical interpretability.

The chapter improved the theory's linguistic exactness by defining several terms and by providing a method to distinguish the five states of company health. Internal consistency was resolved by removing these contradictions from the theory: allowing for the increase in the number of failure trajectories and allowing the use of corporate indicators in calculating the trajectory. Finally, providing a new list of indicators to

measure the trajectory helped refine empirical interpretability. Additionally, this chapter suggested methods to measure the indicators and calculate the trajectory also improved empirical interpretability.

The theory outlined in chapter 2, adjusted for the comments in this chapter, is the theory tested in chapter 8 using Air New Zealand as a case study. However, before the trajectory can be calculated, the accounting information that calculates the corporate indicators has to be examined for creative accounting.

Therefore, this seems to be an appropriate time to introduce the case study, Air New Zealand Limited. Chapter 6 will provide an overview of the company, concentrating upon the period of study, 1989 – 2001. Chapter 7 will examine Air New Zealand's accounting policies, to meet the requirements discussed in the previous paragraph.

Chapter 6: A Brief History of Air New Zealand Limited

6.0 Introduction

To allow for the examination of AMH's trajectory analysis, this thesis will use a New Zealand company, Air New Zealand Limited, as a case study. This chapter will provide a brief history of Air New Zealand. This is done primarily to provide a comparison between the slope and direction of the trajectory and the actual events as they happened. If the trajectory closely matches the actual events, it implies that the trajectory is a faithful presentation of the performance of the company.

Section 6.1 will discuss the early years of Air New Zealand, from its inception in 1940, to the merger with the National Airways Corporation in 1978, and finally its privatisation by the New Zealand Government in 1989. This section will concentrate only on these major events of the company during the first fifty years of its existence. Section 6.2 will discuss the company whilst it was under the ownership of private enterprise, and will cover the period 1989 – 2001. It will have a broader application than section 6.1, discussing the major factors that affected Air New Zealand's trading environment, its financial results and the major changes in ownership and control.

6.1 The early years of Air New Zealand[25]: 1940 – 1989

This section will outline three major events of the company history during the period before the Government privatised the company in 1989. Section 6.1.1 will outline the creation of the airline under its pre-merged names: Tasman Empire Airlines Limited and the National Airways Corporation. Section 6.1.2 will discuss the merger of the two companies in 1978 and the immediate results of the merger. Finally, Section 6.1.3 will outline the reasoning for the privatisation of Air NZ.

[25] Hereafter, this thesis will refer to Air New Zealand as Air NZ.

3.1.1 Air New Zealand's beginnings

Air NZ began operations in April 1940 under the name Tasman Empire Airways Limited (TEAL). TEAL was a joint operating company owned by four separate entities: Qantas Empire Airways (with a 23% equity stake), British Overseas Airways Corporation (BOAC; 38%), Union Airways of New Zealand (19%) and the New Zealand Government (20%) (Thomson, 1968; Rennie, 1990). Qantas was the Australian Government's representative in the venture, BOAC represented British interests. Union Airways, the largest private carrier operating in New Zealand at the time (Rennie, 1990, p. 7), was the New Zealand nominee. Union Airways originally held a 39% stake in the company, but the New Zealand Government took its stake to ensure that private enterprise did not have the majority of New Zealand shares in TEAL (Rennie, 1990). However, when the New Zealand Government nationalised Union Airways in 1945 – 47, it became the major shareholder in TEAL.

The company, as the name suggests, was set up primarily to cater for trans-Tasman flights between New Zealand and cities on the East Coast of Australia. Indeed, its first flight on 30 April 1940 was between Auckland and Sydney. TEAL did not operate domestically; this was the domain of private enterprise, until the passing of the New Zealand National Airways Act on 28/29 November 1945 (Aimer, 2000). This Act authorised the National Airways Corporation (NAC) to operate the domestic and overseas routes excluding trans-Tasman routes, which TEAL serviced.

The National Airways Act nationalised three privately owned companies (Union Airways, Air Travel (NZ) Ltd and Cook Strait Airways) and the RNZAF Air Transport Service into NAC (Patterson and Wallace, 1997, pp. 22-23). NAC did not begin operations until 1 April 1947, 15 months after the passing of the Act, to allow for the transition from private to State control. NAC, after its launch, serviced both islands and several regional routes to South Pacific Islands (including Fiji, Norfolk Island, Tonga, Samoa and the Cook Islands) (Rennie, 1990, p. 34). By 1948, it held a monopoly on the domestic routes (Rendel, 1975, p. 39), which it kept until its merger with Air NZ in 1978.

TEAL experienced many changes after its creation. NAC, which was told by the New Zealand Government to concentrate only on domestic routes, relinquished their international routes to TEAL in 1951 (the Pacific route, renamed the Coral Route) and 1954 (Norfolk Island route) (Aimer, 2000, chapter 4). TEAL expanded into other routes that provided services to other countries. Excluding the Pacific routes discussed above, the first non trans-Tasman route serviced by TEAL was the Auckland – Los Angeles route on 14 February 1965 (Rennie, 1990, p. 176).

The first change in TEAL's ownership occurred in 1949. This change acknowledged the British Government's withdrawal from Pacific routes. The New Zealand Government still was the majority owner (with 50%), Qantas's stake increased to 30%, whereas BOAC's fell to 20% (Thomson, 1968, p. 64). Five years later the British Government decided to withdraw from participation in the South Pacific. Consequently, the New Zealand and Australian Governments became equal shareholders in TEAL, after the Qantas and the BOAC holdings was transferred to the Australian Government in December 1954 (Rennie, 1990, p. 173). The two Governments continued to be joint controllers of TEAL until April 1961, when the New Zealand Government purchased the Australian Government's share for $1.6 million (*ibid.*, p. 162). This deal also signalled the end of TEAL's monopoly on trans-Tasman flights, with Qantas receiving 30% of trans-Tasman routes from October 1961, which increased to 40% the following April (Thomson, 1968, p 164). In 1965, the now wholly owned New Zealand company renamed itself Air NZ, which would reflect better the company's origins (Rennie, 1990, p. 176).

NAC consolidated from its early beginnings. The domestic routes increased until 1953, when they remained stable until the failure of South Pacific Airlines of New Zealand (SPANZ) in 1965 (Aimer, 2000, p. 68). NAC carried over 90% of passenger traffic up to the creation of SPANZ, in 1960. SPANZ, NAC's first major competitor was 49% owned by Ansett Airlines. The company had the potential to be a major competitor to NAC, but was not allowed to fly on the profitable main trunk routes and consequently failed in 1965 (Aimer, 2000, pp. 144 – 159).

Another competitor, Mount Cook Airlines, began operations in 1955. It operated the tourist routes, mainly in the South Island lake regions; however, it also was prohibited

from servicing the main trunk (Patterson and Wallace, 1997, Chapter 5). The company ceased to be a major competitor with NAC when NAC invested in Mount Cook in 1973 (with a 15% equity stake) (*ibid.*, pp. 70 – 74). Finally, NAC took over Safe Air in 1972, a freight carrier that operated mainly between Blenheim and Wellington. Safe Air needed additional funds to purchase new aircraft, which it could not raise itself. NAC could raise the money and Safe Air had no choice but to join the state owned company or fail (*ibid.*, chapter 4).

By the start of the 1970s, both companies were well run and efficient (Rendel, 1975). However, a major change occurred in the 1970s, with Air NZ and NAC merging on 1 April 1978.

6.1.2 The merger and its aftermath

Merger talks between the companies began as early as 1952 and again in 1958. However, at this time, the New Zealand Government did not wholly own both companies and the merger talks were shelved (Thomson, 1968). In 1961, the then National Government raised the idea of merging the two companies again and went as far as merging the TEAL and NAC boards of directors in October 1961. An independent report (the Barr, Burgess and Stewart report) presented in June 1965 halted the merger. It reported that the two companies had a close relationship that would not improve if the Government merged them; the report also advocated separate Boards and Chairmen for each company. The Government implemented their recommendations and the merger talks subsided until 1972 (Aimer, 2000).

Air NZ reopened the merger talks in 1972. They argued that long-term savings would occur if the two companies merged. However, another reason for the merger was so Air NZ could use NAC's resources to help it compete internationally. The General Managers report (Keppel-Patterson report) into the merger, completed in 1974, like the 1965 report, advocated keeping the status quo. The report could see no long-term savings if the companies merged. The Labour Government agreed and the two companies remained separate for another four years (Aimer, 2000, pp. 223 – 225).

The final merger talks began in 1977. The reasons for the merger, as seen by Air NZ, included the following: it would provide long-term benefits, it was in the National interest, it would increase staff efficiency and other commercial reasons (Air NZ was struggling internationally and needed the NAC sales offices to increase revenue) (Patterson and Wallace, 1997, p. 100; Aimer, 2000, pp. 238 - 239). It was also suggested that the Ministries of Transport and Treasury advocated the merger to increase their own control over NAC's operations (Aimer, 2000, pp. 230 – 232). NAC's reasons against the merger were simple and had not changed since the 1960s: the airlines were already efficient and the two companies had separate aims (NAC as a short-haul public utility and Air NZ as a long-haul carrier). Additionally, they saw inherent conflicts if the companies were merged (Aimer, 2000, p. 238). A hastily completed report compiled in a few months (from September – December 1977) by the Secretary of Transport found sufficient evidence of significant benefits to public and nation from the merger. The National Government agreed and the merged company began operations from April 1978. The new company was to be renamed New Zealand Airlines, but after a public outcry, the Government retained the name Air NZ (Aimer, 2000).

When the Prime Minister announced the merger, he suggested the following benefits: savings of $8 – 10 million per annum, increased efficiency of all resources, fewer fare increases and no staff redundancies (Patterson and Wallace, 1997, p. 97). Patterson and Wallace (1997) showed that none of these occurred during the three-year period suggested for the benefits to occur (*ibid.*, pp. 99 – 104). The total losses made during the merged company's first three years of operations were $52 million, although a downturn in the aviation industry and high fuel costs severely affected profits. Fares increased by 148%, at three times the rate of NAC's fare increases during its last three years of separate operations. Resource efficiency fell over the three years, as did staff productivity. Finally, there was no increase in market share.

Employee morale plummeted, because the NAC staff was concerned about their jobs after the merger, and Air NZ employees were worried that the NAC staff would take their employment opportunities. Employee morale was also adversely affected by the Erebus disaster on 28 November 1979 that caused the deaths of 279 people and the grounding of the DC-10 fleet. Both events adversely affected Air NZ's market share.

Furthermore, Air NZ was heavily over-staffed, so its employees suspected that many of them were going to lose their jobs.

The company turnaround began in 1981 with staff cuts of 7% (626 positions). Fifteen percent (1192) more lost employment in 1982[26]. The company implemented several short-term policies in 1981, including eliminating poor work practices, introducing incentive fares to increase revenue and eliminating unprofitable routes (Patterson and Wallace, 1997). Top management also produced a five-year plan in 1982 to return the company to profitability (Air NZ, 1982). The turnaround was impressive with cumulative profits of $304 million from 1983 – 1986 compared with cumulative losses of $142 million from 1979 – 1982 (Patterson and Wallace, 1997, p. 116).

6.1.3 The privatisation of Air New Zealand

Now that NAC and Air NZ were one company, discussion inevitably turned to its privatisation. As markets became less regulated, Governments did not need to own companies that would be better run under private enterprise. This was the policy of the Labour Government from 1984 – 1989, that ultimately sold Air New Zealand to the Brierley consortium made up of Brierley Investments, Qantas Airways, American Airlines and Japan Airlines.

The sale process began when the Government stated an intention to sell 25% of the company in its 1987 budget. Offers closed in May 1988, with two major airline companies, Qantas and British Airways as the leading bidders. Air NZ management favoured the latter bidder, since they opened up Air NZ to both the European and the wider American markets and since British Airways itself did not operate in the Pacific (Patterson and Wallace, p. 155). Qantas did not offer the same advantages to the company. Nevertheless, the Government accepted Qantas' bid on 20 September 1988. The deal was short lived, however, when the Government reopened the bidding on 18 October for the 100% sale of Air NZ, with a maximum foreign investment of 35%.

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[26] Air NZ detailed its staff numbers in its ten-year statistical review provided in its Annual Reports (see the 1989 Annual Report).

The Government provided several reasons for the sale. Firstly, the reasons for nationalising air services back in the 1940s were no longer applicable[27]. Secondly, as the company was now profitable, the private sector was ready and able to fund the services. Thirdly, the Government could not meet the needed capital injection into Air NZ of $200 – 300 million. Fourthly, the funds from the sale would be available for use in the social services; the public would benefit from an improved Air NZ with a more efficient management. Finally, by retaining the 'Kiwi Share', the Government would always ensure that Air NZ was New Zealand owned (Patterson and Wallace, pp. 150 – 151). The kiwi share had no voting powers but Air NZ had to get its holder's consent before it could change certain aspects of its operations (location of the head office) or ownership (maximum percentage of foreign ownership).

Eventually, two consortiums of potential buyers formed to purchase Air NZ: the Brierley consortium made up of Brierley Investments, Qantas, American Airlines and Japan Airlines, and the British Airways consortium made up of British Airways, EIE (a Japanese tourist investor) and DFC (acting in a broker's role). On 22 December 1988, the Government announced the sale to the Brierley consortium for $660 million. Each member purchased the following stake: Brierley 65% (with an agreement to offer 30% for a public float), Qantas 20%, American Airlines 7.5% and Japan Airlines 7.5%; the New Zealand Government retained ownership of the Kiwi share.

The Government chose this consortium because of a "*wide range of considerations which best suited the overall objectives of Government*" (Patterson and Wallace, 1997, p. 159); however, it did not state what these considerations were. Another possible reason was the fact that Brierley was taking a large share, ensuring that the company remained in New Zealand hands.

The entire Board of Directors resigned and was replaced by nine members: R.H. Matthew[28] (Chairman), P.D. Collins, S.J. Cushing, J.B Leslie, J.L. Menadue, P.L.

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[27] These reasons, as detailed by Patterson and Wallace (1997) were the following: government participation in airlines was a logical approach to the development of New Zealand's trade and tourism, it fitted in with the government's strategic objectives as a supplement to military and civil defence and finally, it provided a worthwhile expense in foreign policy terms (to control the country's flag carrier).

[28] Matthew was first appointed as a director on 1 January 1989.

Reddy, T.K. Tamaki (all appointed on 17 April 1989), Sir R. Trotter (12 May) and Dr J.A. Farmer (26 June) (1989 Annual Report). The board contained four Brierley nominees, two Qantas nominees, one Japan Airlines nominee and two independents. Additionally, Tamaki's alternative director was W.G. Kaldahl, the American Airlines nominee. The consortium officially became the new owners of Air NZ on 17 May 1989, thus beginning the period of public ownership from 1989 – 2001, covered in the following section.

6.2 Air New Zealand under Private Ownership

This section will outline Air NZ's performance during three distinct periods. Section 6.2.1 discusses Air NZ during the growth years: 1989 – 1995. Section 6.2.2 will examine the period 1996 – 2000, the stagnation years. Finally, the period where the company collapsed, 2001, is outlined in section 6.2.3[29].

6.2.1 Growth through Expansion: 1989 – 1995

Air NZ began operations under private ownership with the potential for strong growth. Owned by entities that were prepared and willing to provide funds for additional aircraft, the company was poised to compete both domestically and internationally for the passenger dollar. Air NZ's growth through expansion occurred during this period, which culminated in the record profit of $260.2m reported for the year ending 30 June 1995.

This section will examine many aspects of Air NZ's operations. Section 6.2.1.1 discusses the company's trading environment. Additionally, the section will outline any external factors that affected Air NZ's trading environment. Section 6.2.1.2 discusses any major changes in ownership and control over the six years.

[29] Unless otherwise stated, all information contained in section 6.2 is taken from Air NZ's publicly available information: Annual and Six-monthly reports (1989 – 2001), Company Announcements (1989 – 2001), and a summary of Air NZ's Company History (2001) and Financial History (2001).

6.2.1.1 Air New Zealand's trading environment: 1989 – 1995

This section will discuss the company's trading environment under several sub-headings. These are the following: factors affecting Air NZ and the financial results.

6.2.1.1.1 Factors affecting Air New Zealand

During the 1990 financial year, two factors indirectly affected Air NZ's operations. In August 1989, the Australian domestic pilot dispute between the pilots and the major Australian carriers adversely affected market conditions. The short-term consequence was that it had a major impact on passenger numbers travelling into the South West Pacific; the dispute particularly affected Air NZ's Japanese, trans-Tasman and long haul Pacific routes. The other major factor that affected the company's operations was a depressed New Zealand economy. The fact that New Zealand economy was in decline affected the outbound New Zealand market, again reducing travellers on Air NZ's most profitable routes. However, these factors did not stop Air NZ from experiencing a 30% increase in profits.

One external factor affected the company in the 1991 financial year and continued to affect the company for several years afterwards. The Gulf War, which began because of Iraq's invasion of Kuwait in August 1990 and lasted from January – February 1991, significantly affected the airline industry. The war reduced passenger travel during and after the war; it also led to major fuel cost increases as the war was centred in the major oil producing regions of the world. Air NZ's fuel expenses came in $40 million over budget. The final consequence of the Gulf War was that many countries (including NZ and its major trading partners: Australia, the UK and the US) went into recession, adding to the reduced passenger numbers discussed above. It is therefore not surprising that Air NZ's profits declined in 1991 to its lowest level in the 1990s.

The downturn in the world economy caused by recessions in many wealthy countries continued into the 1992 and 1993 financial years. Additionally, the aviation industry suffered its then worst recession in history; this continued into the 1994 financial year. Thus, the industry (and Air NZ) suffered surplus capacity and depressed passenger numbers into 1993. By 1994, the industry still was not enjoying sustainable growth.

However, Air NZ remained profitable throughout this period, partly because of its expansion into the Asian market.

Air NZ remained profitable for many reasons, three of which are discussed below. Firstly, the company reorganised into six operating divisions[30] effective from 1 January 1991, each with its own management structure. The restructuring also caused large-scale redundancies of 1,069 staff in 1991 (10.2% reduction in staff numbers), 582 in 1992 (6.2%) and 510 (5.8%) in 1993[31] which helped keep the labour costs down. Secondly, the company withdrew in 1990 from several unprofitable domestic routes and sold its fleet of Fokker Friendships in the 1991 financial year, which were surplus to requirements. Air NZ's associate Air Nelson, with lower overheads than Air NZ, took over the unprofitable routes. Thirdly, Air NZ expanded heavily into the Asian market, introducing seven new passenger routes from 1990 – 1995[32]. Asia was the fastest growing area of new arrivals into New Zealand; the new routes meant that Air NZ was well placed to cater for them. These factors contributed to the large increases in profits in 1994 and 1995.

By the 1995 financial year, the aviation industry had recovered from the repercussions of the Gulf War. However, two factors affected Air NZ to differing degrees. The Kobe, Japan earthquake in January 1995 reduced Japanese passenger traffic, although growth from other Asian countries easily offset this decline. The second factor was the grounding of Air NZ's domestic fleet (ten Boeing 737 aircraft) in February 1995. The grounding was due to a technical fault not attributable to the company, although the grounding allowed Ansett New Zealand, Air NZ's major domestic competitor, to increase its market share. By the end of the financial year, the company's domestic market share was back to normal (at around 70%).

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[30] These six "distinct business units" were the following: international airline, domestic airline, cargo services, engineering services, catering services and information services. Air NZ added a seventh business unit, terminal services, from July 1993.

[31] The Managing Director provided this number in his report. Subsequent statistical reviews showed that staff numbers only fell by 34 in 1993.

[32] The new routes introduced included Bangkok and Denpasar (in 1990), Taipei (1991), Seoul (1993), Nagoya and Osaka (1994), and Fukuoka (1995).

6.2.1.1.2 Financial results

As discussed above, Air NZ remained profitable throughout this period. Average annual growth in the company's consolidated before-tax operating profit was 26.11% from 1989 – 1995. As the company recovered from the recessions caused by the Gulf War, average growth was even higher at 50.44%[33]. Growth in Shareholder's Funds (including minority interests) was impressive, at an average 13.04% per annum, although a share issue influenced the growth rate. In August 1991, Air NZ issued 140 million shares after a two for one rights issue raising $140 million. Figures 6.1 and 6.2 graph the company's profit and shareholder's funds amounts over the period.

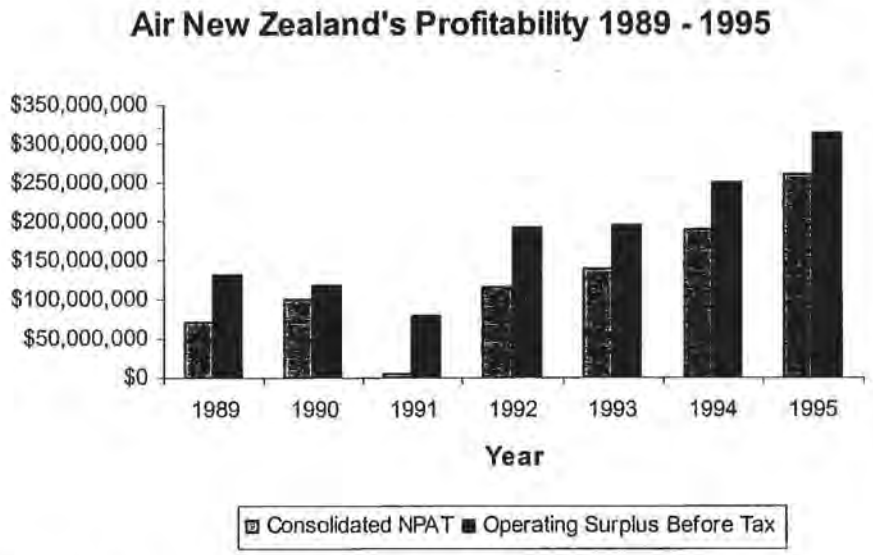

Figure 6.1: Air New Zealand profitability: 1989 – 1995

Air NZ listed its shares on the New Zealand Stock Exchange (NZSE) from October 1989. As part of the deal with the New Zealand Government, Brierley had to on-sell 30% of Air NZ shares to the New Zealand public and company employees. Initially, Air NZ listed only the A class; the company listed the B class on the NZSE in January 1992[34]. However, as shown in figure 6.3, the share price remained depressed during

[33] The consolidated net profit average growth was 338.89% and 522.07% for the two respective periods. These figures were affected by the 2000% growth in net profit in 1992.

[34] Air NZ had two different classes of ordinary shares. New Zealand nationals, as defined in the company constitution, could own the A class. New Zealand nationals broadly meant any NZ citizen, any NZ government department or local authority, any NZ company, business or trust, or any Air NZ employee holding shares through a company scheme. Overseas citizens and corporations (other than airline operators without the NZ government's consent) and NZ nationals could own the B class.

much of the early period, only increasing when the company's results improved in 1993. However, even in 1995 Bob Matthew, Air NZ's Chairman, was dissatisfied with the company's share price performance. He stated that the market prices "*represent modest historic Price Earnings multiples substantially below those attributed to other listed airlines in the Asia-Pacific region ... [and] the average PE of leading shares on the New Zealand Stock Exchange*" (Chairman Statement, 1995 Annual Report, p. 10).

Figure 6.2: Air New Zealand shareholder's funds: 1989 – 1995

Figure 6.3: Air New Zealand's share prices: October 1989 – December 2001

Source: National Business Review and DATEX share history, 1990 – 2001.

This period under private ownership, was Air NZ's time of strong growth. Annual growth and profitability after 1995 never approached that obtained from 1989 – 1995. The company had cash reserves of $542.3 million in 1995, which it retained for investing purposes, in either new routes or other companies. In conclusion, Air NZ was in a good position to continue its strong expansion shown during the early 1990s. As section 6.2.2 will show, this did not happen.

6.2.1.2 Changes in Ownership and Control

During 1989 – 1995, Air NZ's executive management and equity owners remained stable. Of the original four buyers of Air NZ, American Airlines sold their stake in February 1992 and Japan Airlines theirs in December 1994. However, Brierley Investment and Qantas Airways ensured continuity of ownership by owning between them from 54.7% (reported in the 1993 Annual Report) to 84.9% (1989 Annual Report) of the total shares on issue. Indeed, Brierley's holding never fell below 35%, making it the major shareholder during the first six years. Appendix 1 provides the top five shareholders of Air NZ from 1989 – 2001.

Consequently, very few changes occurred for the Board of Directors. Air NZ had nine directors (increased to ten when James McCrea was appointed managing director in August 1992). The American Airlines director resigned in March 1991 (permanently replaced by the Japan Airlines director). In 1995, three members resigned (the Japan Airlines and Qantas contingent), the former because they no longer had an investment in Air NZ, the latter as they wanted to use independent directors. However, a core directorship made up of the Brierley and independent directors remained unchanged over the six years. Appendix 1 lists the Directors of Air NZ from 1989 – 2001 including their appointment and retirement dates, and the nominator of the director.

Finally, executive management also remained stable from 1989 – 1995. The group had 15 members in 1989, increasing to 17 by 1995. The major change in top management was when Jim Scott resigned as Chief Executive Officer in April 1991. His deputy, James McCrea, replaced him in August 1991. Other changes in executive management were small, with seven retirements and nine appointments during the six years. See Appendix 1 for a list of the company's executive management.

6.2.2 Consolidation and Stagnation: 1996 – 2000

This period is described as the stagnating years, because Air NZ's profits declined and never reached the amounts enjoyed in 1995. During these years, the company consolidated its position, faced intense competition from other airlines and entered into a worldwide airline group. Finally, Air NZ began and completed its foray into the Australian domestic market with the purchase of Ansett Holdings Ltd.

This section contains two subsections. Section 6.2.2.1 examines Air NZ's trading environment from 1996 – 2000. Section 6.2.2.2 outlines any major changes in ownership and control.

6.2.2.1 Air New Zealand's trading environment 1996 – 2000

This section examines four factors that affected Air NZ's operations during the late 1990s. These are the following: external and internal factors, the investment into Ansett Holdings, entering the Star Alliance and the financial results.

6.2.2.1.1. Factors affecting Air New Zealand

Many factors affected Air NZ, which it had no control over. However, five factors stand out. Three were relatively short-term, whereas the other two affected the operations throughout this period and indeed during Air NZ's entire life.

During the 1996 and 1997 financial years, two factors stood out that had a major effect upon Air NZ's domestic operations. These were the industrial action taken by Air NZ air traffic controllers, and the Mount Ruapehu eruptions. During December 1995 and again in September 1996, air traffic controllers went on strike, forcing the airlines to change their flight-times and affecting thousands of passengers. A suggestion of the numbers affected by the industrial actions was up to 10,000 people per day (Evening Post, 1995; Sunday Star Times, 1996; The Daily News, 1996).

The strikes occurred around the same time as the eruptions of Mount Ruapehu. A major eruption in September 1995 caused the closure of Palmerston North's airport

(Bell, 1995). This closure forced Air NZ to divert flights to other centres and disrupted main route flights. Furthermore, ash clouds created by Mt Ruapehu affected many North Island airports during June and July 1996, stranding many domestic and international flights (Dunbar, 1996; Samson 1996). The airport closures affected thousands of passengers (see Saunders, 1996; Waikato Times, 1996).

The third factor that had a major effect on Air NZ's operations was the decline in the Asian economies from 1997. The Asian Economic Crisis caused many people from the Tiger Economies to stop travelling, severely affecting Air NZ. From 1989 - 1995, most of Air NZ's growth occurred through flights offered to and from the Asian region (see section 6.2.1.1.1). International passenger traffic declined 25% or 122,500 visitors, for the 1998 financial year. Air NZ suspended its flights to Seoul from December 1997 through a lack of demand. The lower demand from Asia continued into the 1999 financial year, although passenger numbers recovered to 1997 levels. The Asian Economic Crisis contributed to the decline in profits throughout the period.

The final two factors affecting Air NZ throughout its life are as follows: firstly, exchange rate pressures, and secondly, oil prices. Foreign exchange (forex) movements (especially against the US$) are vitally important to the company, since a major portion of its revenue, expenses and capital expenditure come from foreign sources. For example, in 1995, Group forex revenue exceeded $1.5 billion for the first time and continued to do so throughout the 1990s. Thus, more than half of Air NZ's revenue came from forex. The major forex expenses are aviation fuel, aircraft leasing costs and interest expenditure; the major capital expenditures are jet aircraft (purchased in US dollars). Therefore, movements in forex have major effects on Air NZ's financial results.

Although the company relied on both forex revenue and expenditure, it seems that Air NZ should want a stronger NZ$. A high NZ$ would reduce revenue, but would also push down aircraft and equipment costs, and lease, fuel and interest expenditure. For example, in the 1996 income year, forex revenue fell $100 million because of the stronger NZ$. The strengthening NZ$ continued into 1997, reducing forex revenue by $70 million (cost savings were not provided in 1995 and 1996). However, as the

NZ$ weakened in the late 1990s, it increased Air NZ's costs by $135 million in 1998 and major increases in 1999 and 2000[35]. Figure 6.4 provides the New Zealand exchange rate movements against the US$ and Trade Weighted Index from 1989 – 2001. Generally, a weak NZ$ coincided with lowering profitability (see sections 6.2.2.1.4 and 6.2.3.3).

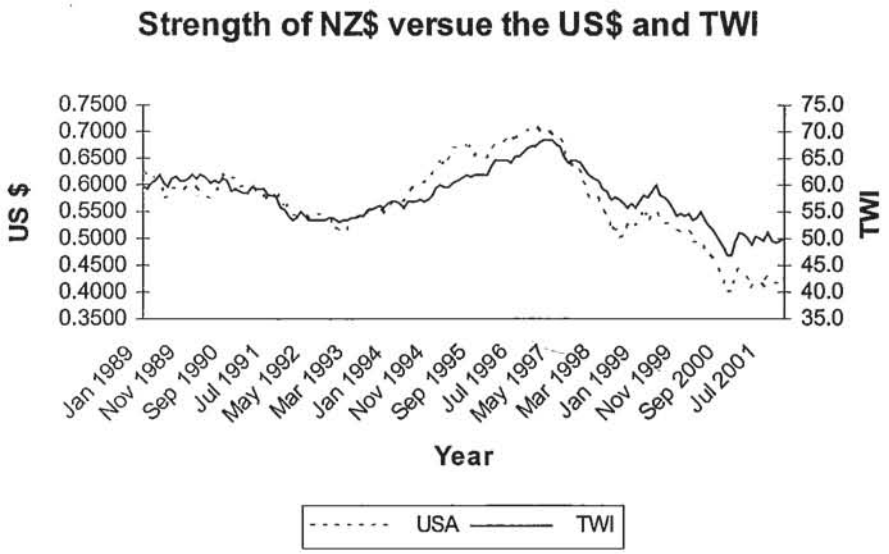

Figure 6.4: NZ$ versus the US$ and TWI: 1989 – 2001

Source: Reserve Bank of New Zealand

Increasing fuel costs only became a problem in the late 1990s. Higher fuel prices increased fuel expenditure by 11.8% in 1997. This was a short-term increase, as fuel cost fell in the following two income years: by 2.7% in 1998 and 7.1% in 1999 on relatively stable consumption. However, fuel costs increased by 44.0% in 2000 (by $141.7 million to $463.7 million), because of the historically high oil prices. Consumption only increased by 2.0% to 327.2 million gallons.

Air NZ initiated many changes to remain competitive. In 1995, it launched Freedom Air as a budget trans-Tasman carrier, in direct competition with Kiwi International. Freedom continued after Kiwi collapsed in September 1996 (Dunbar, 1996). Air NZ transformed itself when it began the 'Pacific Wave' in April 1996 (completed in

[35] The 1999 and 2000 Annual Reports do not provide any amounts. The Chairman and Managing Director's reports only mention that adverse foreign exchange movements affected the company in both these years.

August 1997), which was designed to increase service quality by implementing a number of changes including increasing the number of business class seats and increasing legroom. Air NZ began 'Project Save', a cost-cutting measure, in 1996. Its aim was to reduce costs by $100 million annually from 1998. Project Save actually increased costs by $10.4 million in 1997[36], although it saved $84 million in 1998. Cost savings after 1998 are unknown, as Air NZ's annual reports did not discuss the project. Finally, Air NZ sold several unprofitable segments of its operations: Air NZ's catering business in June 1997, the light aircraft operations and coach touring business in May 1998 and Ansett Express in June 1999. All of these factors provided short-term boosts to Air NZ's profitability and ensured that Air NZ remained profitable up to 2000.

6.2.2.1.2 Investment into Ansett Holdings Limited

Air NZ made very few investments during the early 1990s, preferring to expand through growth rather than acquisition. However, the company completed three acquisitions in the early 1990s: the Mount Cook Group in the 1991 financial year, Air Nelson in December 1995, and Jetset Travel and Technology Holdings in July 1997. Its largest acquisition was Ansett Holdings, which Air NZ initially invested in 1996.

During the early 1990s, The New Zealand and Australian Government's were attempting to create a single Australasian aviation market. This would have allowed carriers to operate domestically in both countries, therefore allowing Air NZ to operate in the Australian market in direct competition with Qantas Airways and Ansett. However, the Australian Government suspended the agreement in 1994; if Air NZ were to enter into the Australian market, it would have to be through one of the established players.

In 1995, Air NZ began discussions with the shareholders (TNT Ltd and News Corp) of Ansett Australia in an attempt to establish closer relations. On 2 September 1996, Air NZ announced a deal to purchase 50% of Ansett Australia, TNT's stake in the

[36] Project Save incurred one-off restructuring costs of $25.4 million in 1997. These were partly offset by benefits from the project of $15 million.

company. They paid A$475 million, A$325 million direct to TNT and the remainder as a capital contribution. News Corp took over Ansett NZ, which allowed for continued competition in the domestic market. Air NZ had both an equal stake with News Corp in Ansett and an equal number of board members.

Various commentators have described this deal as the worse thing to hit either Air NZ or Ansett (see Van den Bergh, 2001; Espiner, 2001b; 2001c; Easdown and Wilms, 2002). However, at the time, Air NZ generally had positive things to say about the deal:

> *"The Ansett Australia investment is expected to serve the Group's interests more effectively than any attempt at independent entry to what is already a mature and highly competitive Australian domestic market. It provides Air NZ with the advantage of immediate and comprehensive access to the much larger Australian domestic aviation market through Ansett's well-established network.*
>
> *"The Directors expect that in the medium term Air NZ will enjoy significant benefits by way of improvements in the earnings of Ansett Australia and through the cost savings and other benefits available to each of the two airlines through them working in close cooperation. However, the financial impact of the investment is expected to be neutral in the current financial year ...*" (Chairman's Report, 1997 Annual Report, p. 6).

As part of Air NZ's purchase agreement, the company had a pre-emptive right to purchase News Corp's stake in the company. This fact only became important when Singapore Airlines (SIA) became interested in News Corp's stake. SIA made an offer of A$500 million in May 1999 for News Corp's stake in Ansett, which News Corp could not accept because Air NZ objected. Instead, Air NZ made substantially the same offer to News Corp, who accepted because of Air NZ's right mentioned above. They announced the sale in February 2000 for $703 million (A$580 million) plus a deferred consideration equivalent to 10.5% of the market value of Air NZ as at 18 February 2000. The Australian Foreign Investment Review Board approved the

purchase in June, making Air NZ one of the world's top 20 airlines. SIA subsequently invested in Air NZ.

Air NZ did not consolidate Ansett in its accounts until 2000. As Air NZ and News Corp had an equal equity share in Ansett, neither one controlled it and SSAP-8 (1990), accounting for business combinations, did not require consolidation. Thus, Ansett contributed to Air NZ's profits during the period as an associate of the airline. Table 6.1 outlines Ansett's profits from 1997 – 2000, and Air NZ's share of Ansett's profits. During this period, Ansett always contributed to Air NZ's own profits, even in 1997 when it made a loss.

Financial Year Ending	Ansett's Pre-Tax Profit; After-Tax Profit (in A$ million)	Air NZ's share of Ansett's Profits (in $ million)
1997	(11.4); (35.0)	17.6
1998	82.2; NA	32.3
1999	200.4; 156.9	101.7
2000	NA ; 144.4	61.3

Table 6.1: Ansett profitability and contribution to Air New Zealand, 1997 – 2000

Source: Chairman and Managing Director's reports, Air NZ Annual Reports

6.2.2.1.3 Alliances

Throughout the 1990s, Air NZ began entering into alliances and partnerships with other airlines. Generally, the major partnership type Air NZ entered into was codeshare services, whereby two airlines established a relationship that allowed them to sell tickets on each other's flights. These flights are operated by only one of the airlines, but can be sold by either airline. Air NZ entered into many codeshare agreements including those with the following airlines: Ansett (from September 1996), United Airlines (May 1997), Singapore Airlines (October 1997) and Luthansa (July 1998). Codesharing is a simple way of expanding an airline's coverage without increasing the numbers of flights operated. For example, Air NZ's codeshare agreement with United Airlines applied to approximately 146 United flights per day from January 1999, increasing Air NZ's coverage to at least eight US cities.

The culmination of the different partnerships occurred when Air NZ entered into the Star Alliance in March 1999. The Star Alliance was (and still is) the world's largest airline alliance and membership "*[brought] considerable network and loyalty benefits to Air NZ's customers*" (Chairman's Report, 1998 Annual Report, pp. 6 – 7). Additionally, it provided Air NZ with exposure and recognition in markets where the company has a minimal presence[37].

6.2.2.1.4 Financial results

Generally, Air NZ's profitability fell over the entire period. The company remained profitable until 2000, when an accounting policy change reduced Air NZ's after-tax surplus of $184.4 million to a consolidated after-tax loss of $600.1 million (Air NZ's then largest consolidated loss). The company's profitability (as shown by figure 6.5) declined from 1996 to 1998 at an average rate of 16.77% (before tax decline 17.91%). However, Air NZ's profits improved in 1999 by 48.02% (before-tax increase 17.54%), in part due to the company's share of Ansett's profits. The company's profits declined again in 2000 by 13.20% excluding the accounting policy change, or by 380% including it. The accounting policy change was a change in tax accounting from the partial method to the comprehensive method, which resulted in a one-off charge of $786.2 million (chapter 7 will discuss this accounting policy in detail). This period has been described the stagnating period since Air NZ's profitability declined even though revenue continued to increase (by an average 5.32% per annum; see figure 6.6).

The continued after-tax profits made by Air NZ, meant that shareholder's funds continued to increase (see figure 6.6). Shareholder's funds increased at an average rate of 13.69% from 1996 to 1999; it declined 25.21% in 2000 due to the loss caused by the accounting policy change. Air NZ made two major share issues, each to fund the investment into Ansett. The first share issue was in November 1996, this issued an additional 119.4 million shares, raising $252.2 million. At the same time, the

[37] When Air NZ entered the Star Alliance, the following airlines were either members or achieving full membership: Air Canada, Ansett Australia, Lufthansa, Scandinavian Airlines System, Thai Airways International, United Airlines, Varig Brazilian Airlines, All Nippon Airways (joined October 1999) and Mexicana (joined in July 2000).

company increased foreign ownership by increasing the proportion of 'B' shares to 49% (previously 35%). The second share issue issued another 189.2 million shares on 10 November 2000, and this raised $280.2 million.

Figure 6.5: Air New Zealand profitability: 1996 – 2000

Finally, total assets grew at an average rate of 9.32% from 1996 – 1999; however, total assets doubled in 2000 when Air NZ consolidated Ansett in its accounts (see figure 6.6). Growth in liabilities accounted for all of the increase in total assets in 2000, with the reported debt ratio increasing to 82.3%[38]. Thus, from the Ansett purchase in June 2000, Air NZ was highly geared, which is one of the mistakes suggested by AMH that lead to failure.

[38] The Chairman's report actually reported that the Group's equity ratio declined to 17.7% (from 48.4%).

Figure 6.6: Air New Zealand shareholder's funds, total assets and turnover: 1996 – 2000

6.2.2.2 Changes in Ownership and Control

During this period, there were a few major changes in shareholding and management. Brierley remained the major shareholder with an equity stake ranging from 30.32% (reported in June 2000) to 47.08% (June 1998) of the total shares on issue. However, from 1997 – 1999 Brierley's stake was held in several holding companies: Anafi Investments (holding 'A' shares), Urtica Investments ('B' shares) and Portfolio Management (a mix of 'A' and 'B' shares). Anafi Investments held Brierley's entire stake from August 2000, as Brierley sold the holdings in the other two companies to SIA.

Qantas sold its equity stake in March 1997 to a range of international institutional investors. This probably included Franklin Resources Inc, who was a substantial security holder from 1997 – 1999, holding at least 5% all shares on offer during this time. Finally, SIA purchased 8.3% of Air NZ in April 2000, increasing its stake to 25% by August.

There were significant changes in who made up the board of directors. On 30 June 1998, the Chairman, Matthew, resigned from the Board; his deputy, Cushing, replaced him as Chairman. Three other long-serving directors (that is, had been directors from

1989) also retired during the period: Trotter at the same time as Matthew, Reddy and Collins on 27 October 1999. Another director (Landels) retired in November 1998, after serving on the board for three years.

When SIA completed its purchase into Air NZ, they were given the right to nominate three directors; a resolution was passed increasing the board size from nine to thirteen plus the managing director. Finally, one director (Wareing) retired in November 2000, after serving for five years. The makeup of the Board as at 31/12/2000 was the following: four Brierley directors, three Singapore Airlines directors and six independents. There was no managing director because Jim McCrea resigned in July 2000.

Until 2000, there were very few changes in the executive management. Air NZ appointed four executive managers and seven retired during 1996 – 1999, reducing the total number in the group to fourteen. However, major changes occurred during 2000. Firstly, McCrea resigned on 7 July 2000, with another three senior managers leaving at the same time. As his replacement, Gary Toomey, did not begin as CEO until January 2001, Cushing was Executive Chairman for the remaining six months of 2000. In October 2000, Air NZ combined the management structures of Air NZ and Ansett into a new 21-person group (New Zealand Press Association, 2000). Air NZ appointed five additional managers to the executive team, three of them former Ansett employees. The remaining 20 Ansett top management either resigned or Air NZ fired them (Espiner, 2001b; Easdown and Wilms, 2002).

It is important to note that leadership continuity at a management level did not continue after McCrea resigned. McCrea had been Scott's deputy when the Board appointed him CEO in 1991. Cushing, although a board member and Chairman, probably had very little operational control over Air NZ. However, he was expected to run the combined Ansett/Air NZ airline during the first six months of integration. In addition, Toomey came from Qantas Airways and had no previous management experience at Air NZ (although he did serve as an alternative director from 1993 – 1995). At least three of AMH's management defects are present from this time, these being a combined CEO and Chairman, inadequate strategic understanding and lack of management depth (the latter two referring to Australian operations).

6.2.3 The Collapse: 2001

The 2001 financial year is undoubtedly Air NZ's worse year ever in its 61-year existence. Shares, that had traded as high as $2.36 (B class $2.80) at the start of the year, fell to a low of $0.18 (B class $0.155) on 24 September 2001 (see figure 6.3). Additionally, the year saw the collapse of Ansett Australia and Air NZ recorded New Zealand's largest ever corporate loss of $1.4 billion, of which $1.32 billion related to the write-off of Ansett in Air NZ's books. Air NZ's woes continued when it recorded a $376.5 million consolidated loss for the six months ending 31 December 2001. That Air NZ was in financial strife was an understatement.

This section will outline the major problems that faced Air NZ's operations during the period. Section 6.2.3.1 will discuss the collapse of Ansett. Section 6.2.3.2 discusses the other major external factors affecting Air NZ during the period. Section 6.2.3.3 will outline the financial results for the period. Finally, section 6.2.3.4 examines the changes in ownership and control, including a brief discussion of the New Zealand Government's rescue plan.

6.2.3.1 The collapse of Ansett

The collapse of Ansett Australia has been the subject of numerous newspaper articles in both New Zealand and Australia. Additionally, at least one book (Easdown and Wilms, 2002) has also examined the collapse of the airline in some detail. This section will discuss the major internal and external factors that led to the demise of Ansett.

There were many internal problems with Ansett's jet fleet. Ansett used seven different jet aircraft from four different manufacturers, each requiring different engineering facilities and pilots to operate them. Furthermore, Ansett had the second oldest fleet among the top 50 carriers (Van den Bergh, 2001), which meant that the aircraft needed very regular (and expensive) maintenance checks. These problems led to two embarrassing groundings of their fleet: the Ansett Boeing 767-200 aircraft around Christmas 2000 and their entire 767 fleet in Easter 2001. Although, the company managed to deliver 95% of passengers to their destinations during the

groundings, the damage was done with many passengers turning to Qantas or the no-frills competitor, Virgin-Blue.

This leads onto the second problem leading to Ansett's collapse, competition. During the 1990s, Australia had a domestic duopoly between Ansett and Australian Airlines (later Qantas when the Australian Government merged the two firms in 1992). However, two budget carriers (Impulse and Virgin Blue) began operating in Australia soon after Air NZ purchased Ansett. Impulse only lasted a couple of months before Qantas acquired it; however, Virgin Blue was still in operations at the end of 2001. These airlines changed the face of competition, by lowering prices and margins and stealing market share[39]. Ansett could not compete, considering the large mismatched fleet and high operational costs it faced. It did not help when the travelling public deserted Ansett after the two fleet groundings (Van den Bergh, 2001).

Another change in Ansett's operations was the high oil prices and depressed Australian Dollar (A$). Fuel prices were at historical highs and the A$ reached record lows against the US$. This severely affected Ansett's operations since most of the company's fuel costs, lease payments and loan repayments were denominated in US$. Thus, this caused Ansett to pay more money to cover these expenses.

The final problem was the change in Ansett's management. Before the takeover by Air NZ, Ansett had an effective and efficient management structure under the leadership of its Executive Chairman, Rod Eddington. However, he left just before the sale, leaving Ansett "*rudderless, lacking a permanent CEO and a proper first-line team of senior management*" (Easdown and Wilms, 2001, p. 111). The latter comment relates to the fact that Air NZ retained only three of Ansett's senior managers; they also replaced Ansett's top 250 commercial, marketing and sales managers (*ibid.*, p. 114 – 116). The lack of an effective management exacerbated the above problems and not-surprisingly led to Ansett losing millions of dollars in cash per day.

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[39] Ansett's market share fell from 54% in June 2000 to 39% when it failed: 85% of the loss in market share went to the budget carriers (Espiner, 2001c).

The final collapse was relatively swift, although many of the facts were not released until just before Air NZ placed Ansett in voluntary administration on 13 September 2001. A week before voluntary administration, Virgin Blue's owner Richard Branson stated that Ansett was losing $1 million in cash a day (Riordan, 2001). This number was too low, as Air NZ had informed the New Zealand Government in late August that Ansett's losses were $1.6 million a day (NZ Press Association, 2001). However, at times Ansett lost $3 million per day or $21 million a week (Easdown and Wilms, 2002).

The Air NZ board placed Ansett in voluntary administration to prevent the collapse of the parent company. Ansett contributed $191.8 million in operating losses for the year ended 30 June 2001 and an additional $129.8 million in losses in the following three months. It is no wonder that Air NZ wrote-off Ansett, especially after experiencing its own problems.

6.2.3.2 Factors affecting Air New Zealand during 2001

Air NZ faced an equally challenging trading environment as its subsidiary during 2001. The company faced the same high oil prices and an even lower currency against the US$, that caused its fuel bill to increase by $378 million in the 2001 financial year. However, two major events, other than Ansett, affected Air NZ during the period: the collapse of Qantas New Zealand and the September 11 attacks.

On 21 April 2001, Qantas New Zealand, Air NZ's major competitor on domestic routes, was placed in receivership. Qantas New Zealand began operations as Newmans Air; however, when Ansett Australia purchased the company in 1987, they renamed it Ansett New Zealand (Espiner, 2001a). When Air NZ invested in Ansett in 1996, News Corp purchased Ansett New Zealand, to comply with competition regulations. News Corp sold Ansett NZ to Tasman Pacific in April 2000, who renamed the company Qantas NZ. However, the one constant in the company's life was that it never made sufficient profits and it eventually ran out of cash in April 2001 (*ibid.*).

The positive spin-off for Air NZ was that it flew significantly more domestic passengers in the weeks following Qantas NZ's collapse. In the first week alone, it flew an extra 25,000 passengers. However, this short-term gain disappeared after the more profitable Qantas Airways fully entered the market in July (Kennedy, 2001).

The other major effect on Air NZ's operations was the September 11 attacks in the US. Briefly, terrorists took control of four planes, two of which they flew into the World Trade Centre in New York, a third was flown into the Pentagon in Washington DC. A consequence of this was to place the international aviation industry into its worse recession since the early 1990s. Air NZ's international passenger numbers declined by at least 7.7% after the attacks, which contributed significantly to the loss made for the six-months ending 31 December 2001.

To summarise, there were three major factors affecting Air NZ's operations. The first, and most important one, was the collapse of its subsidiary Ansett Australia in September 2001. The second factor was the collapse of its major domestic competitor Qantas NZ. This collapse provided short-term benefits, but also allowed Qantas Airways to enter the market. The final factor was the September 11 attacks, which severely affected Air NZ's profitability in the last three months of 2001.

6.2.3.3 Financial results for Air New Zealand during 2001

Air NZ's profitability declined substantially during this period. Table 6.2 provides a breakdown of Air NZ's financial results in six-monthly intervals, covering the six-months ended 31 December 2000 (December 2000), 30 June 2001 (June 2001) and 31 December 2001 (December 2001). The June 2001 profitability and cash flow figures are calculated by subtracting the December 2000 figures from the year ended June 2001 figures, provided in Appendix 1.

During the 2001 calendar year, the company lost a cumulative $342.9 million in operating losses and a massive consolidated after-tax net loss of $1,805.6 million. Ansett's operating losses in this period were $386.8 million. This implies that had Air NZ operated separately, it would have made an operating profit of $43.9 million during the 2001 calendar year. The consolidated net loss can also largely be

attributed to Ansett: Air NZ wrote-off its investment in Ansett in June 2001 ($1,320.9 million) and incurred demerger expenses in December 2001 ($389.7 million).

	Six-Months Ended 31/12/2000 (in $000s)	Six-Months Ended 30/6/2001 (in $000s)	Six-Months Ended 31/12/2001 (in $000s)
Revenue	4,311,489	3,648,636	2,579,354
Operating Expenditure	4,196,940	3,816,850	2,754,086
EBIT (loss)	114,549	(168,214)	(174,732)
Earnings Before Tax (loss)	(32,890)	(1,524,362)	(418,033)
Consolidated Net Profit (loss)	3,781	(1,429,099)	(376,513)
Current Assets	2,886,034	2,791,432	1,386,858
Long-term Assets	6,651,510	5,322,597	2,695,824
Total Assets	9,517,544	8,114,029	4,082,682
Current Liabilities	3,887,670	3,639,157	2,285,236
Long-term Liabilities	3,727,318	3,956,833	1,671,716
Equity	1,902,556	518,039	125,730
Net Operating Cash-flows	189,080	(42,765)	(187,401)
Net Investing Cash-flows	(210,490)	77,109	(123,607)
Net Financing Cash-flows	27,280	28,741	17,803

Table 6.2: Financial results of Air New Zealand

Because of the large losses, total equity fell significantly. From December 2000 – December 2001, equity declined to 6.61% of its value, whilst the equity ratio worsened to 3.1% (19.99% in December 2000). Finally, the company lost cash in the 2001 calendar year. Operating cash flows were an outflow of $230.2 million during the 2001 calendar year, which is unprecedented for a company that created cash from operations in almost every six-monthly period from March 1989 – June 2000 (see appendix 1).

6.2.3.4 Changes in Ownership and control – 2001

There was no actual change in share ownership during the 2001 calendar year. However, effectively the New Zealand Government (NZ Govt) controlled Air NZ by December 2001. The following will summarise how the NZ Govt ended up in control of the company.

Both the executives and directors knew that Ansett needed a modern fleet to be competitive, and that required up to $1.5 billion in extra funding (Van den Bergh, 2001; Easdown and Wilms, 2002, p. 129). Two different proposals to fund this recapitalisation deal became apparent from April 2001: one by Qantas, who would acquire SIA's stake, the other by SIA and Brierley. Each deal involved allowing either Qantas or SIA purchasing an equity stake greater than the 25% allowed under Air NZ's constitution. However, the NZ Govt was unwilling to allow a foreign airline to increase its stake and both deals soured by September 2001.

Instead, the NZ Govt proposed its own recapitalisation deal on 13 September 2001, which Air NZ's shareholders accepted in December 2001. The deal had two stages. The first stage involved the NZ Govt lending Air NZ $300 million on 15 October 2001. The second stage would have Air NZ repaying the loan to the NZ Govt in the form of preference shares issued at $0.24. These preference shares carry a fixed cumulative dividend of 5% per annum, have full voting rights and will convert (at one for one) to ordinary shares on 1 January 2005, or earlier, as the NZ Govt decides. Additionally, the NZ Govt would invest another $585 million for new ordinary shares in Air NZ; the company would also reclassify its A and B class into one ordinary class of shares. The shares were reclassified on the 24 December 2001. However, the second stage was not complete by the end of December 2001[40].

This change in control naturally caused major changes in the directors of the company's board. Earlier on 29 May 2001, Farmer replaced Cushing as Chairman.

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[40] The second stage was completed on 18 January 2002. Air NZ repaid the $300 million loan plus accrued interest by issuing 1,279,866,438 preference shares. Further, 2,166,666,667 ordinary shares were issued to the NZ Govt at $0.27 per share. From the recapitalisation date, Air NZ had 4,203,354,290 shares on issue, of which the NZ Govt owned 82%. Brierley and SIA's equity stake fell to 5.5% and 4.5% respectively (see 2001/02 Interim Report).

Cushing resigned because of a possible conflict of interest regarding the recapitalisation deal; he was also the Chairman of Brierley.

The major changes occurred on 4 October 2001. The Board was reduced to eight directors made up of one nominee of SIA, one nominee of Brierley, four independents and two directors approved by the NZ Govt. Six directors resigned on that day, whilst a seventh retired earlier on 20 September 2001. Table 6.3 outlines the directors of Air NZ as at 31 December 2001 and the directors who retired during 2001 calendar year.

Current Directors as at 31/12/2001		Retired Directors during 2001	
Name	Date Appointed	Name	Date Resigned
John Palmer Chairman	29/11/2001	Hon Phillip Burden	4/10/2001
Dr James Farmer Deputy Chairman	26/6/1989	John Curtis	4/10/2001
Sir Ronald Carter	23/7/1998	Sir Selwyn Cushing	4/10/2001
Dr Choong Kong Cheong	8/8/2000[1]	Charles Goode	20/9/2001
Elizabeth Coutts	8/8/2000[2]	Professor Phillip Rose	4/10/2001
Roger France	4/10/2001	Michael Tan	4/10/2001
Ralph Norris	27/8/1998	Greg Terry	4/10/2001
William Wilson	20/12/1999		

Table 3.3: Air New Zealand Directors during 2001 calendar year

NB [1] The 2001 annual report states that Dr Cheong was appointed on 10 August 2000. This date comes from the 2000 annual report.

[2] The 2001 annual report states that Ms Coutts was appointed on 7 August 2000. This date comes from the 2000 annual report.

Finally, the executive management structure changed considerably over the period[41]. The first change occurred when Toomey began as President and CEO in January 2001. Toomey brought with him several executives from Qantas who immediately took up senior positions in Air NZ (Easdown and Wilms, 2002, p. 121). In late February 2001, the management structure was reorganised from a business unit structure to one of functional units. The new management structure had twelve functional units. At least four executives retired (National Business Review, 2001).

[41] In only two years from 1989 – 2001 did Air NZ not disclose who made up its executive management. These were 1991 and 2001. Possibly, Air NZ did not disclose its management team in 2001 because it was so radically changed from that disclosed in 2000.

Top management remained largely unchanged until Air NZ placed Ansett in voluntary administration. Roger France replaced Toomey on 9 October 2001, when he resigned as President and CEO. France became the executive director for the remainder of the period. The 2001 Annual Report stated that the company had begun a major management and staff-restructuring programme, which the company continued into 2002. The restructuring programme resulted in a 17% reduction in management numbers and a 30% reduction in salary costs. Air NZ announced its new executive team on 23 October 2001, with six members, plus the CEO. At least eight senior executives left the company between October and December 2001.

To summarise, Air NZ had continuity of ownership and directors at least through to September 2001, when the company placed Ansett in voluntary administration. However, control (in the form of senior management) changed three times, once in January 2001, again in February, and finally in October. Instability in the top management would have severely hindered Air NZ's ability to respond to the problems outlined in sections 6.3.3.1 and 6.3.3.2. Additionally, this is one of AMH's management defects that cause company failure.

After September 2001, the company was effectively under the NZ Government's control, which is observable from the major changes in the board of directors. Furthermore, management changed again as France oversaw the process that reduced management numbers by 17%.

6.3 Summary

This chapter has provided an overview of Air NZ, concentrating on the period 1989 – 2001. After the privatisation of Air NZ in 1989, the company went through three distinct periods. The first was a period of rapid growth from 1989 – 1995, especially from 1991 – 1995. The company outperformed many of its competitors (Espiner, 2001a) during this period when the aviation industry was in the midst of a harsh recession brought on from the fallout of the Gulf War of 1991. From 1991, Air NZ's profits grew annually, reaching a record profit of $260.2 million in 1995. The company had good continuity of control, with the Chairman remaining the same

during the period and the CEO only changing once in 1991 (see table 6.4). Finally, the company had two corner shareholders: the majority owners Brierley Investments and Qantas Airways.

Chairman			Chief Executive Officer (CEO)			
Name	Date Appointed	Date Resigned/ Replaced	Name	Position Held	Date Appointed	Date Resigned/ Replaced
R D Matthew	17/4/1989	30/6/1998	R J Scott	CEO	6/1988	4/1991
Sir S J Cushing	30/6/1998	29/5/2001	J McCrea	CEO & Managing Director	8/1991 (1992 as Director)	7/7/2000
J A Farmer QC	29/5/2001	29/11/2001	Sir S J Cushing	Executive Chairman	7/7/2000	3/1/2001
J L Palmer	29/11/2001		G K Toomey	President & CEO	3/1/2001	9/10/2001
			G R W France	Executive Director	10/2001	

Table 6.4: Chairmen and Chief Executive Officers of Air New Zealand 1989 – 2001

From 1996 – December 2000, Air NZ entered a period of stagnation. The company's own profitability declined over much of this period; Group profit only improved in 1999 because of the equity accounted returns from Ansett Australia. Air NZ entered into the Australian market by purchasing 50% of Ansett Australia in 1996 and taking over the company in 2000. However, the Asian Economic Crisis, which began in 1997, adversely affected the company as it dramatically reduced profitability on their Asian passenger routes.

Leadership from the board remained stable with Matthew retiring in June 1998 and his deputy, Cushing replacing him. More worrying signs were apparent at a management level when McCrea resigning as CEO in July 2000. Toomey replaced him in January 2001; in the interim, Cushing ran the company. Brierley continued as the majority shareholder during this period. Qantas sold its shareholding in March 1997. SIA replaced Qantas as a corner shareholder when it completed a 25% purchase of Air NZ in August 2000.

The calendar year 2001 was a difficult one for Australasian airlines. Three airlines collapsed (Impulse, Qantas New Zealand and Ansett Australia) and one other, Air NZ, came very close. That year was the final period, the collapse. Ansett struggled to compete with a radically changed Australian domestic market with two new budget airlines, an aged fleet and high overheads. By the middle of 2001, the company was losing at least $1 million in cash per day. The drain on Air NZ's coffers continued until September 2001 when it placed Ansett in voluntary administration. Air NZ incurred New Zealand's largest annual corporate loss of $1.425 billion in the 2001 financial year and an additional $376.5 million corporate loss for the six-months to December 2001.

The New Zealand Government established effective control of Air NZ from September 2001, when it announced a recapitalisation deal that would see the NZ Government investing $885 million in the company. The company had three Chairmen (Cushing, Farmer and Palmer), one CEO (Toomey) and two executive directors (Cushing and France) during 2001. Additionally, six directors resigned on 4 October 2001, leaving a much smaller board of eight to run the remnants of Air NZ. Finally, the executive management changed three times: when Toomey arrived in January 2001, in February 2001 when the management structure changed, and in the last three months of 2001 when France was executive director.

Many of the causes advocated by AMH affected Air NZ. Management defects were apparent from July 2000 (see above), as was poor responses to changes in the trading environment (for example, an inadequate response to Ansett's deteriorating situation). Additionally, Air NZ made two of AMH's three mistakes (high gearing and the failure of a big project, Ansett), faced constraints (especially with respect to refinancing) and normal business hazards (high oil prices and a weak NZ$). At least one symptom was observable from 1995, when Air NZ's finances began to decline. Furthermore, numerous non-financial symptoms were observable in 2001, as was a declining share price. Therefore, it seems that Air NZ exhibited nine of the causes and symptoms of corporate failure advocated by AMH.

The following chapter will investigate another symptom suggested by AMH, creative accounting. After Air NZ's financial statements are evaluated for creative accounting techniques, chapter 8 will produce Air NZ's trajectory.

Chapter 7: Removing the Sheen from Air New Zealand's Financial Statements

7.0 Introduction

Air NZ (like all New Zealand companies) is required to comply with New Zealand disclosure requirements. Briefly, these requirements are legal requirements (summarised in the Financial Reporting Act 1993 and the Companies Act 1993) and stock exchange requirements (detailed in stock exchange regulations). Air NZ has to release an annual report, which includes several financial statements. In addition, Air NZ, in complying with NZSE regulations, also releases half-yearly reports. These reports are the major publicly released documents released by Air NZ concerning its performance and position over the period 1989 – 2001.

The annual and half-yearly reports are produced under generally accepted accounting practice (GAAP). GAAP encompasses specific rules relating to particular circumstances and broad concepts of general application (Explanatory Forward, 1995, paragraph 4.1). In New Zealand, this means complying with any source of authoritative support (section 24(d), Financial Reporting Act, 1993). The major source of authoritative support is the accounting policies contained in the New Zealand accounting standards. Broadly speaking, accounting standards are rules that establish how to recognise, measure and disclose particular transactions and other events (Explanatory Forward, 1995, paragraph 3.4).

Many changes in GAAP happened over the period 1989 – 2001. Firstly, the Companies Act 1993 and Financial Reporting Act 1993 replaced the Companies Act 1955. The Financial Reporting Act 1993 gave statutory backing to all accounting standards. This meant that non-compliance with accounting standards was a criminal offence. Secondly, the number of accounting standards increased substantially over this period. The titles of these accounting standards changed from 'statement of standard accounting practice' (SSAP) to 'financial reporting standard' (FRS). The latter title meant that the accounting standard had been issued under the Financial

Reporting Act 1993 and met the requirements of the Statement of Concepts (SOC; 1993). The SOC (1993) is New Zealand's conceptual framework. It outlines the following: the objectives of general purpose financial reporting, the qualitative characteristics of useful information and the definitions of the different financial elements (SOC, 1993, paragraph 1.4). The SOC (1993) is meant to be the core of the accounting process; although, if there are any conflicts between the SOC (1993) and an accounting standard, the standard should be followed (Explanatory Forward, 1995, paragraphs 3.2, 3.8).

This chapter will examine Air NZ's financial statements, and consequently, its accounting policies. Section 5.2.3 argued for the analysis of a company's accounting policies and notes to the accounts to minimise creative accounting. The analysis contained in this chapter follows and expands on Smith (1996), whereby the accounting polices and notes are examined for changes that increase profit or remove liabilities from the balance sheet. Based upon this criteria, the following parts of Air NZ's accounting polices are discussed in greater detail: operating leases, asset revaluations, income taxes, market value of investments, deferred charges and financial instruments. Unless otherwise specified, all figures produced in this chapter relate to Air NZ's group accounts.

7.1 Air New Zealand's disclosure of leases

This section discusses in detail Air NZ's leases. Section 7.1.1 summarises lease accounting in New Zealand. Section 7.1.2 outlines the value of Air NZ's leases from 1989 – 2001. It shows that Air NZ changed to leases of an operating nature over this period. Section 7.1.3 evaluates whether non-cancellable operating leases should be recognised on the balance sheet. Section 7.1.4 states the treatment of leases for trajectory analysis. Section 7.1.5 discusses possible leveraged leases used by Air NZ.

7.1.1 Summary of accounting for leases as per SSAP-18 (1990)

The accounting standard defines two major types of leases: operating and finance leases. Operating leases are all leases that are not classified as finance leases (SSAP-

18, 1990, paragraph 3.3). Furthermore, all lease agreements relating to land will be classified as operating leases if the land does not transfer to the lessee at the end of the lease term. This is because land has an indefinite useful life (*ibid.*, paragraph 4.28).

Finance leases are any leases that substantially transfer all the risks and rewards of ownership to the lessee (SSAP-18, 1990, paragraph 3.2). SSAP-18 provides a more specific definition of what makes up a finance lease[42]; this divides leases into finance and operating leases. The definition of a finance lease makes it possible to structure the lease agreement in such a way that it does not meet the requirements in paragraph 4.4, and thus is classified as an operating lease. However, whether a lease is a finance lease or not relates to the substance of the transaction, not the form of the contract (*ibid.*, paragraph 4.3). Therefore, if a lease agreement provides substantially the same requirements as those given in paragraph 4.4, it should be classified as a finance lease.

The distinction between the two types of leases relates to whether the asset and liability arising from the lease should be recognised. A finance lease leads to the recognition of both a liability and an asset in the financial statements. An operating lease will not lead to the recognition of any assets or liabilities in the financial statements. Thus, by classifying finance leases as operating leases, a company can reduce the amount of liabilities shown on the balance sheet.

There are several disclosure requirements required in the lessee's financial statements. The lessee must show all the finance lease liabilities classified into several periods: payable within one year, between one and two years, between two and five years and more than five years. Furthermore, the lessee's financial statements will separately disclose the amount of finance lease interest (SSAP-18, 1990, paragraph 5.15).

The lessee should show the rental expense of all operating leases separately in the financial statements. Additionally, the lessee must disclose all non-cancellable

[42] Briefly, a lease would normally be classified as a finance lease when: the lease is non-cancellable; the collection of the minimum lease payments is reasonably predictable; and one of the following: the lease transfers ownership to the lessee at the end of the lease term; the lessee has the option to purchase the asset at a price less than the fair value and at the time of lease inception; it is reasonably certain that the option will be exercised; the lease term is for a major portion of the useful life (at least 75%); and, the present value of the minimum lease payments at inception is not less than substantially all (90%) of the fair value of the asset (SSAP-18, 1990, paragraph 4.4).

operating lease commitments with a lease term of more than one year, classified into the same periods as finance leases; that is, ranging from lease amounts payable within one year to amounts payable after five years (SSAP-18, 1990, paragraphs 5.16, 5.17).

7.1.2 Discussion of Air New Zealand's leases

During the period 1989 – 2001, Air NZ had both operating and finance lease agreements. Table 7.1 provides the values of non-cancellable operating and finance leases disclosed by Air NZ from March 1989 – December 2001. From the table it is obvious that Air NZ changed to leases of an operating nature rather than a financial nature over the twelve years. Operating leases increased 19-fold over the twelve years, whereas finance leases decreased by almost 30% during the same period.

There are several consequences from Air NZ's move towards operating leases and away from finance leases. Firstly, the company recognised fewer liabilities on the balance sheet. Had Air NZ structured all its lease agreements as finance leases, total assets and liabilities would have increased by a maximum of $2.965 billion for the year ending June 2001 (increasing total assets by 37%). Secondly, the recognition of leases as operating leases reduced the risk of Air NZ using typical risk proxies like the debt to equity ratio, because the operating leases do not feature on the balance sheet.

Thirdly, the two types of leases are treated differently for tax purposes. The entire operating lease payment is tax deductible, whereas only the interest portion of the finance lease is deductible for tax purposes (sections EO 2A and FC 8G Income Tax Act, 1994). However, a finance lessee can claim the depreciation for tax purposes (sections BD 2(1)(a) and FC 8G Income Tax Act, 1994). Therefore, there is a possible tax advantage for recognising operating rather than finance leases, depending upon the size of the depreciation charge. Nevertheless, the major consequence is that Air NZ did not have to recognise a large amount of non-cancellable operating leases as liabilities in the statement of financial position.

Date	Finance Leases (in millions)	Non-Cancellable Operating Leases[1]	
		Total Operating Leases (in millions)	Aircraft Operating Leases (in millions)
31/03/1989	$355.9	$47.7	$27.4
31/03/1990	$360.1	$188.2	$109.7
30/06/1991	$543.9	$477.3[2]	$409.4[3]
30/06/1992	$516.5	$610.8	$531.6
30/06/1993	$466.3	$481.6	$373.2
30/06/1994	$335.4[4]	$426.9	$321.5
30/06/1995	$336.5	$514.2	$407.2
31/12/1995	$317.8	$528.1	$430.7
30/06/1996	$288.1	$503.9	$375.4
31/12/1996	$262.9	$484.3	$379.3
30/06/1997	$258.7	$509.6	$392.3
31/12/1997	$264.6	$579.8	$488.9
30/06/1998	$275.7	$591.5	$452.7
31/12/1998	$275.7	$661.2	$533.0
30/06/1999	$199.2	$582.9	$461.8
31/12/1999	$196.7	$739.5	$616.4
30/06/2000	$428.6	$2,406.1	$1,011.1
31/12/2000	$334.1	$2,685.6	$1,374.9
30/06/2001	$326.7	$2,965.2	$1,691.1
31/12/2001	$256.0	$912.2	$808.0

Table 7.1: Value of the Air New Zealand Group leases from 1989 – 2001

[1] Air NZ does not state that their operating leases are non-cancellable. However, it is assumed that they are non-cancellable, because that is all that is required by SSAP-18 (1990).

[2] The 1992 annual report comparative figure was $672.8 million.

[3] The 1992 annual report comparative figure was $596.6 million.

[4] The 1995 annual report comparative figure was $389.4 million. From 1995, the deposits held to pay off finance leases was recorded as an investment, instead of being netted against finance leases.

7.1.3 Should non-cancellable operating leases be recognised as a liability?

Notwithstanding what it states in SSAP-18 (1990), is there an argument for classifying non-cancellable operating leases as a liability and recognising the amount

in the balance sheet? The now discontinued G4+1[43] standard setting body addressed this issue a number of times. A 1996 document (McGregor, 1996) advocated accounting for non-cancellable operating leases in the same way as that done for finance leases. However, to fall under the proposed changes, the non-cancellable operating lease duration had to be longer than one year. The reasoning behind this is simple: rights and obligations established under operating leases are the same in nature as those established under finance leases. Furthermore, it would "*enable the financial statements of lessees to reflect the rights and obligations arising under non-cancellable leases, thus enhancing the relevance and representational faithfulness of the financial statement*" (McGregor, 1996, p. 17).

The G4+1 body revisited the issue in 2000 (Nailor and Lennard, 2000). Under this paper's advocated approach, the lessee would recognise the rights and obligations conveyed upon them by the lease agreement. The lease would be recognised on the balance sheet in a similar way to that already done for finance leases. Nailer and Lennard (2000) reasoning for capitalising operating leases is because the current accounting treatment is not the most relevant of the available choices. The current accounting treatment does not provide useful information for the users' of the Financial Statements. Nailor and Lennard (2000) provided the example whereby investment analysts attempt to capitalise operating leases to provide a more appropriate measure of financial position (Nailer and Lennard, 2000, paragraph 1.18). Obviously, investment analysts do not agree with the current accounting treatment for non-cancellable operating leases. Thus, this paper also advocates capitalising non-cancellable operating leases, subject to materiality.

Nevertheless, the question arises: does a non-cancellable operating lease meet the definition and measurement criteria of assets and liabilities? If this does not happen, there seems to be no reason for capitalising these types of operating leases. Stevenson (1992) stated that at least one standard setting board (the UK Financial Accounting Standards Board) has conceded that, in theory, non-cancellable leases should be capitalised. McGregor (1993) discussed this in detail and showed that any material

[43] The G4+1 standard setters was made up of representatives from the New Zealand, Australia, Canada, the United States, the United Kingdom and International Accounting Standards Committee accounting standard setters.

non-cancellable lease would meet the measurement and recognition criteria for assets and liabilities contained in SAC 4[44].

McGregor's (1993) reasoning was as follows. Non-cancellable leases would meet the definition of an asset because the future economic benefits provided by the leased property would be controlled by virtue of the lease agreement. Additionally, non-cancellable leases would meet the definition of a liability since, under the lease agreement, the lessee has a present obligation to sacrifice future economic benefits to the lessor. These leases would meet the recognition criteria as lease agreement specifies the amounts of the lease payments and it is probable that the lessee will pay those amounts to the lessor. He concludes by stating,

> "*The rights and obligations established under operating leases are no different in nature to those established under finance leases. ... Failure to reflect the rights and obligations arising under material operating leases in the financial statements will understate both the resources controlled by those entities and the financial obligations they have to external parties*" (McGregor, 1992, p. 20).

To summarise, there is an argument for recognising non-cancellable operating leases in the financial statements. Based upon the definitions given in the SOC (1993), these types of leases would meet the measurement and recognition criteria of both assets and liabilities. Thus, they would be recognised as such, if not for the intervention of SSAP-18 (1990).

7.1.4 Treatment of non-cancellable operating leases in trajectory analysis

The discussion in subsection 7.1.3 shows that non-cancellable operating leases should be recognised in the balance sheet (ignoring for the moment that SSAP-18, 1990, does not require it). Furthermore, this thesis assumes that all assets and liabilities (including off-balance sheet amounts) should be included to evaluate trajectory analysis.

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[44] The measurement and recognition criteria for assets and liabilities contained in the SAC 4 are substantially the same as those contained in the SOC (1993).

The treatment proposed here, is to include the amount (shown in table 7.1) of non-cancellable operating leases in the total value of assets and liabilities. The liability will have a long-term duration, except for the portion repayable in the current year. The asset will be shown as one fixed/long-term asset. The lease asset will not be split into its two separate assets (the asset itself and the rights of the asset), because this would only be possible with a copy of the lease agreement[45]. The operating lease will be treated in a similar manner to that of a finance lease, although the financial performance effects will remain the same (see subsection 7.1.1).

The one drawback of this method is the use of the total lease payment as the value of the asset and liability. Generally, the lessee can value leases at the lower of the present value of the minimum lease payments and the fair value of the asset (SSAP-18, 1990, paragraph 5.1). None of these values are known, so the recognised amount may be somewhat larger than what might have been the case.

7.1.5 Leveraged Leases

Arising from the 1995 annual report, an interesting phenomenon occurred regarding Air NZ's operating lease disclosure. Table 7.2 reproduces the value of the group and parents operating lease commitments over the financial years 1989 – 2001. For the years 1989 – 1994 and 2001, the group values exceeded the parent values for both aircraft and property leases. However, for the period 1995 – 2000, the parent's aircraft operating leases were greater than the group's aircraft operating leases. Prima facie, this does not make sense; the group accounts are an aggregation of the parent and all of its subsidiaries. Generally, one would expect the parent's values to be smaller (as it is for the property leases over the entire period).

In the operating lease note, Air NZ acknowledged that the parent leased a number of aircraft from its wholly owned subsidiary, New Zealand International Airlines Limited[46]. Ostensibly, this can explain the difference in the two amounts, as any

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[45] The lease agreement would show the assets leased, the amount of the lease payments, the lease term, etc. Without this information, it would not be possible to split the operating lease asset into its separate parts.

[46] This subsidiary is described as an aircraft leasing and financing company in Air NZ's Annual reports.

related party transactions between the parent and its subsidiary will be eliminated on consolidation. Two quotes from Air NZ's annual reports may resolve this issue. In the company's 1994 annual report, it stated:

	Group Values (in millions)		Parent Values (in millions)	
	Aircraft Operating Leases	Property Operating Leases	Aircraft Operating Leases	Property Operating Leases
31/03/1989	$27.4	$20.3	$27.4	$20.3
31/03/1990	$109.7	$78.5	$109.7	$72.6
30/06/1991	$409.4	$67.9	$409.4	$67.9
30/06/1992	$531.6	$79.1	$354.2	$70.3
30/06/1993	$373.2	$108.4	$355.0	$98.0
30/06/1994	$321.5	$105.3	$289.7	$89.7
30/06/1995	$407.2	$107.1	$788.4	$103.3
30/06/1996	$375.4	$128.5	$529.0	$114.7
30/06/1997	$392.3	$117.3	$592.5	$107.3
30/06/1998	$452.7	$138.8	$965.8	$108.3
30/06/1999	$461.8	$121.1	$966.1	$99.2
30/06/2000	$1,011.1	$1,395.0	$1,279.9	$105.4
30/06/2001	$1,691.2	$1,274.0	$1,456.3	$103.6

Table 7.2: Value of Group and Parent operating leases commitments

> "*For the Purposes of section of the Companies Act 1955 as amended, Air NZ Limited and one of its subsidiaries, New Zealand International Airlines Limited, have agreed to enter into a transaction ... with certain overseas banks for the financing of two Boeing B767-319 aircraft ... . Certain directors of Air NZ Limited and New Zealand International Airlines Limited are 'interested' in this transaction because they are also directors of the other company involved, or because they are executives of Air NZ Limited*" (1994 Annual Report, Note 21, p. 61).

The 1995 annual report disclosed the following information concerning these planes: "*[d]uring the year, the Company transferred two aircraft to its wholly owned subsidiary, New Zealand International Airlines Limited for $264,514,000 and subsequently leased these aircraft on operating lease agreements. All these transactions are eliminated on consolidation*" (1995 Annual Report, Note 16, p. F16).

No other annual report discussed the types of operating lease agreements between Air NZ and its subsidiary. It would seem that Air NZ has used leveraged leases. SSAP-18 (1990) does discuss leveraged leases; this is reproduced below:

> "*Certain finance lease transactions are structured in such a way that they involve at least three parties, the lessee, the lessor and one or more long-term lenders who provide part of the acquisition finance for the leased asset usually without any general recourse to the lessor. These lease transactions are sometimes known as leveraged leases. In such cases, the lessor records his/her investment in the lease net of the non-recourse debt and of the related finance costs to the third-party long term lender and recognises finance income on the basis of his/her net cash investment outstanding in respect of the finance lease*" (SSAP-18, 1990, paragraph 4.19).

Here, New Zealand International Airlines would record the lease transaction net of the debt used to purchase it. This would be recorded in its accounts, which would also be consolidated into the group's accounts. Because of what the standard requires, the group accounts would not show any of the debt incurred to fund the aircraft purchase. The only indicator of the possible debt amount is the difference between the parent and group operating leases commitment. Figure 7.1 provides a possible diagram of the leases affecting Air NZ throughout the period from 1989 – 2001. It is a simplified diagram of a very complicated part of their operations. Since the Air NZ group's finance leases decreased during the period, it seems that Air NZ appears to have exhibited an on-going process of removing liabilities from the balance sheet.

Air NZ's use of leverage leases has grim implications, these being that the company used the accounting standards to remove debt from both the financial statements and the notes to the accounts. Any possible leveraged leases have not been included in the analysis, because of difficulties in ascertaining the true amount of the debt used. Furthermore, Air NZ may not have used such transactions in their leasing arrangements. This subsection has been included to bring to the readers' attention a possible use of the accounting standards to withhold useful information to the users of the financial statements.

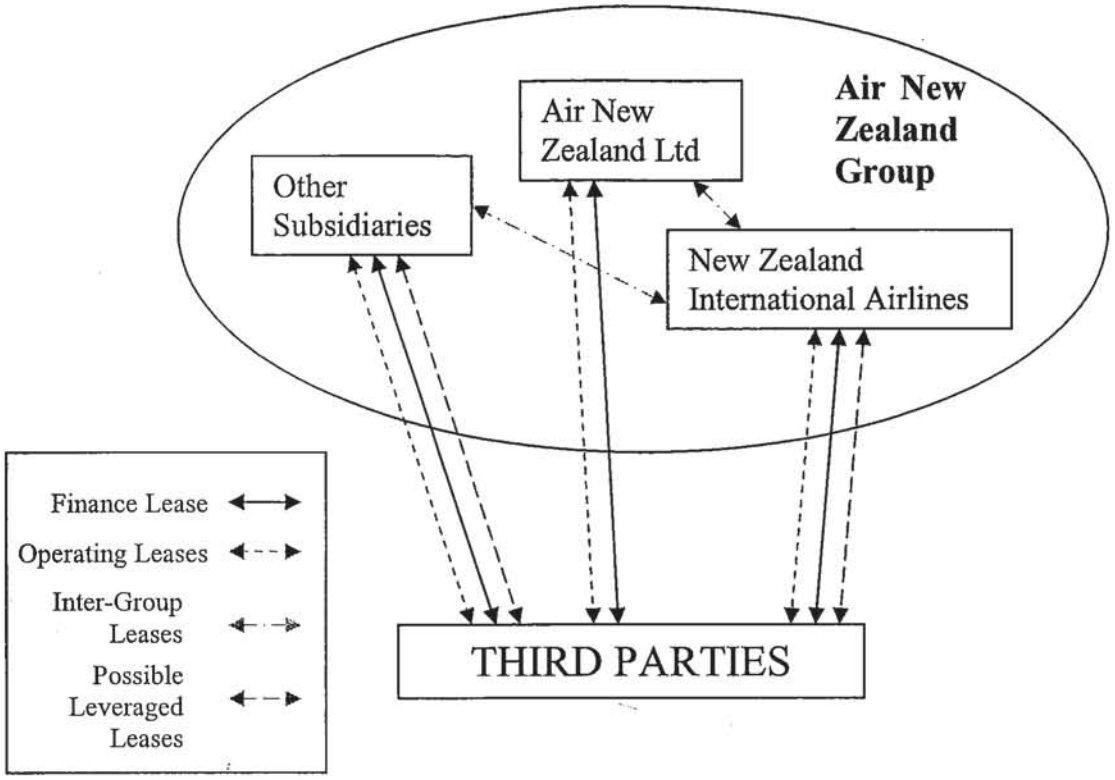

Figure 7.1: Possible leases used by Air New Zealand

7.2 Air New Zealand's asset revaluation policy

This section outlines the effect of Air NZ's asset revaluation policy on trajectory analysis. Section 7.2.1 discusses the applicable accounting practices during the period 1989 – 2001. Section 7.2.2 outlines Air NZ's revaluation policy. It shows that their choice of policy materially undervalued assets during many of these twelve years. Section 7.2.3 provides the treatment for the undervaluation of Air NZ's assets for the purposes of trajectory analysis.

7.2.1 Summary of New Zealand accounting standards regarding asset revaluation

During the period of study, three types of GAAP governed asset revaluations in New Zealand. Before the introduction of SSAP-28 (1990), New Zealand did not have an accounting standard addressing fixed assets or asset revaluation issues. Consequently, accounting for asset revaluations could follow any generally accepted accounting policy.

New Zealand companies began revaluing their assets from the 1950s, although, the only assets generally revalued were land and buildings. By 1980, revaluing assets was a generally accepted policy in New Zealand. However, there were not the same limitations on revaluations as imposed by SSAP-28 (1990); for example, companies did not have to revalue systematically or revalue all assets in the same class at the same time (Leitch, 1997).

From 1990 – 2001, the relevant accounting standard was SSAP-28 (1990). This standard argued for asset revaluations only when the entity adopted the modified historical cost accounting system. Revaluation of fixed assets should happen systematically and preferably on an annual scale. Additionally, all assets within a class of assets should normally be revalued at the same time (SSAP-28, 1990, paragraph 4.14).

Asset valuations should only be done by an independent valuer; a necessary requirement to provide reliability concerning the value (SSAP-28, 1990, paragraph 4.15). The revaluation should be at net current value, and should not result in the net carrying amount being greater than the recoverable amount[47] (SSAP-28, 1990, paragraph 4.16). Government valuations (district valuation roll valuations) should not be used as revalued amounts unless an independent valuer (*ibid.*, paragraph 4.17) has confirmed the basis of valuation. Finally, a transitional provision (*ibid.*, paragraph 4.27) allows an entity to continue to use the carrying values shown in their financial statements at the date of commencement (1 October 1991) for SSAP-28 (1990).

In March 2001, a new accounting standard (FRS-3, 2001) was issued, which combined SSAP-28 (1990) with SSAP-3 (1984), accounting for depreciation. The revaluation provisions are contained in paragraphs 7.1 – 7.22. Under FRS-3 (2001), paragraph 7.1, an item of property, plant and equipment can only be revalued if: all the items within that class of asset are revalued to fair value; the revaluations happen

[47] The accounting standard defined each of these terms. Briefly, net current value is the price that might be expected when sold at the operative date, less disposal costs (SSAP-28, 1990, paragraph 3.8). Net carrying amount is the book value of the asset (*ibid.*, paragraph 3.7). Recoverable amount is the amount of net cash inflows expected to arise from the assets continued use and eventual disposal, or its disposal, when the asset is to be disposed in the immediate future (*ibid.*, paragraph 3.9)

on a systematic basis (at a minimum, every five years); and, the revaluation is done by an independent valuer, or at the fair value determined by an active market or at the readily available price[48]. Revaluation is not mandatory, but is encouraged to provide information that is more relevant to users of the reports (FRS-3, 2001, paragraph 7.2).

The frequency of the valuations depends upon movements in the fair value of the asset. As the volatility in the movements of the fair value become significant, so should the frequency of revaluations increase (FRS-3, 2001, paragraph 7.5). Furthermore, a rating valuation (for example, Government valuations) should not be used for recording revaluation, unless an independent valuer confirms the basis of the valuation (*ibid.*, paragraph 7.10). Finally, a transitional provision (*ibid.*, paragraph 12.3) allows an entity to continue to use carrying amounts as at 1 October 1991, if the entity did not subsequently revalue these amounts in accordance with SSAP-28 (1990). Apart from the transitional provision, FRS-3 (2001) applies from 31 March 2002 (so falls outside of the period of study).

7.2.2 Air New Zealand's asset revaluation policy

Air NZ's asset revaluation policy is quite simple: the company very rarely revalued its assets. The only times Air NZ revalued their assets was in 1976 (when the company revalued select land and buildings), in 1985, when the company purchased a majority stake in the Mount Cook group, and in 2000, when the company consolidated the Ansett group. The latter two revaluations relate to the assets and liabilities brought in by the subsidiaries and required under SSAP-8 (1990), paragraph 4.29. The company did not revalue any of its other assets. All other assets are valued at depreciated historical cost.

It seems Air NZ made use of SSAP-28's (1990) transitional policy as stated in section 7.3.1. Air NZ's 1994 annual report stated that "... *certain of the Group's Land and*

[48] Of the three terms discussed in this sentence, two are defined in the standard. Property, plant and equipment are tangible assets that are held for continual use in the production and supply of goods, services, rental or administrative purposes and items held for maintenance of assets (FRS-3, 2001, paragraph 4.35). "*Fair value is the amount for which an asset could be exchanged ... between knowledgeable, willing parties at an arm's length transaction*" (*ibid.*, paragraph 4.23). The term "active market" is not defined in this standard, but a possible definition is given in IAS 38 (Intangible Assets): a market where the items traded are homogenous; willing buyers and seller can be found at any time; and, prices are available to the market (provided in Roberts, 2002).

Buildings are stated at valuation ... the Directors have elected to continue to account for these assets on the basis of the revalued amounts as at 30 June 1992"[49] (1994 Annual Report, Statement of Accounting Policies, p. 44). In the 1992 report, Air NZ disclosed that their asset values were shown at cost, except that " ... *the Group's industrial and commercial land and buildings at Mangere were revalued by independent valuation as at 31 March 1976*" (1992 Annual Report, Note 9, p. 48). It seems a reasonable assumption that Air NZ will continue to use these non-revalued amounts by applying FRS-3's transitional provision (discussed in subsection 7.2.1).

There are three major consequences of Air NZ's accounting policy. Firstly, fixed asset values are likely to be undervalued in the statement of financial position, assuming at least 10 years of land value increase from the company's last revaluation at the beginning of the analysis. Furthermore, Air NZ's ROCE figure will be larger because of a smaller denominator. If assets are not revalued, it will reduce both the asset revaluation reserve and total equity, thereby reducing capital employed. Secondly, the company has a smaller fixed asset base, and as a consequence, will recognise a smaller annual depreciation charge in the statement of financial performance (assuming the same depreciation policies). This has the added bonus of reducing expenses and increasing net profit. Thirdly, Air NZ will recognise very large gains on sale, if they sell any of their long-term fixed assets. This is because the company has a small book value for these types of fixed assets; and all things being equal, the gain on sale would be smaller if the company used more recent asset values.

Air NZ's accounting policy raises the following question: are they providing useful information for the readers' of their financial reports? Air NZ does provide additional disclosure; they disclosed the market value of their jet aircraft and the Government valuations of their New Zealand land and buildings. Table 7.3 provides the book and market values of these assets, and the amounts of fixed assets and total assets Air NZ recognised in the statement of financial position for the period March 1989 – June 2001.

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[49] SSAP-28 (1990) became operative from 1 October 1991. This was during Air NZ's 1992 financial year. The first time it could apply this standard would be from 30 June 1992.

	Jet Aircraft (in millions)			Land and Buildings (in millions)			Total Assets	Fixed Assets
	Market Value	Book Value	Diff.	Market Value	Book Value	Diff.	(in millions)	
31/03/1989	$926.6	$780.7	$145.9	$146.4	$89.6	$56.9[1]	$1,681.5	$1,278.0
31/03/1990	$1,174.2	$1,044.3	$129.9	$149.6	$91.3	$58.3	$2,189.2	$1,615.9
30/06/1991	$1,206.2	$1,114.7	$91.4	$149.1	$89.1	$60.0	$2,358.7	$1,726.0
30/06/1992	$1,247.0	$1,102.7	$144.3	$145.3	$81.3	$64.0	$2,409.4	$1,575.4
30/06/1993	$1,300.1	$1,288.1	$12.0	$134.3	$81.4	$52.9	$2,729.0	$1,761.5
30/06/1994	$1,213.0	$1,247.2	-$34.2	$142.7	$81.4	$61.3	$2,861.5	$1,752.9
30/06/1995	$1,226.3	$1,298.0	-$71.7	$144.2	$79.5	$64.7	$3,107.2	$1,820.4
30/06/1996	$1,143.1	$1,190.1	-$47.0	$145.6	$82.4	$63.2	$3,134.8	$1,737.6
30/06/1997	$1,244.7	$1,259.1	-$14.4	$150.4	$82.0	$68.4	$3,346.8	$1,813.9
30/06/1998	$1,673.9	$1,640.3	$33.7	$146.4	$72.8	$73.6	$4,104.0	$2,213.7
30/06/1999	$1,648.7	$1,698.2	-$49.5	$184.7	$66.7	$118.0	$4,390.7	$2,223.2
30/06/2000	$4,735.2	$4,411.6	$323.6	$735.3	$606.9	$128.3	$8,989.4	$6,027.1
30/06/2001	$2,037.3	$1,931.5	$105.9	$195.9	$74.0	$122.0[1]	$8,114.0	$4,997.7

Table 7.3 Book and market values of select Group Air New Zealand assets

[1] Differences are due to rounding errors.

There are some major differences between the book and market values. Over the entire period, the Government valuations of Air NZ's land and buildings exceeded the book value by at least $50 million. The jet aircraft valuations are more volatile. For five years, the book value exceeded the market values of the aircraft (by a maximum of $71.7 million). The other years were the opposite; the market value exceeded the book value by a maximum of $323.6 million in 2000.

The jet aircraft valuations volatility is because of Air NZ's foreign currency policy. Air NZ denotes the value of their aircraft in US$, and uses this value as a natural hedge for US$ denominated loan and lease liabilities. The movements in the market value are caused by fluctuations in the NZ$ – US$ exchange rate, not major movements in the valuations (which are also denoted in US$). Thus, the market value fell when the NZ$ appreciated against the US$ and vice-versa.

This raises the question of whether these values are material. Table 7.4 shows the sum of the differences between the market and book values as a percentage of both

total and fixed assets. As expected, Air NZ's fixed assets were undervalued throughout much of period. For only one year (1995) did the book value exceed the market value, although by only a very small amount. The undervaluation of assets was greater than 5% of total and fixed assets in five years (the years 1989 – 1992 and 2000).

	Total value of differences shown in Table 7.4 (in millions)	Sum of differences as a percentage of:	
		Total Assets	Fixed Assets
31/03/1989	$202.8	12.06%	15.87%
31/03/1990	$188.2	8.59%	11.64%
30/06/1991	$151.4	6.42%	8.77%
30/06/1992	$208.3	8.64%	13.22%
30/06/1993	$64.9	2.38%	3.68%
30/06/1994	$27.1	0.95%	1.54%
30/06/1995	-$7.0	-0.23%	-0.39%
30/06/1996	$16.2	0.52%	0.93%
30/06/1997	$54.1[1]	1.62%	2.98%
30/06/1998	$107.3	2.61%	4.85%
30/06/1999	$68.4[1]	1.56%	3.08%
30/06/2000	$452.0[1]	5.03%	7.50%
30/06/2001	$227.8[1]	2.81%	4.56%

Table 7.4: Difference between market and book values of select Air NZ assets as a percentage of Group total and fixed assets

[1] Differences are due to rounding errors.

However, is the undervaluation material? According to the SOC (1993), materiality is a matter of judgement and is concerned with whether the information affects the perceptions of the users (paragraph 6.6). SSAP-6 (1985), materiality in financial statements, provides an appendix giving percentage guidelines for what is material. This appendix states that any variation in amount greater than 10% is material and a variation between 5 – 10% could be material. Finally, there are industry norms used by New Zealand auditors to determine materiality levels. These 'rules of thumb' differ for various financial items, but the total asset materiality figure is 2%.

Based upon auditor benchmark levels of 2%, eight of the annual undervaluation amounts shown in table 7.4 are material (1989, 1990, 1991, 1992, 1993, 1998, 2000

and 2001 income years). For these years, it seems appropriate to revalue the assets, to provide more recent and relevant data. Air NZ did not revalue the assets themselves because SSAP-28 (1990) did not require them to, and the auditor was probably satisfied with the additional disclosure of the market values.

7.2.3 Treatment of the undervaluation of Air New Zealand's fixed assets

There are material differences between Air NZ's book values of their major assets (the jet aircraft and land and buildings) and the disclosed market values. The proposal here for trajectory analysis is to revalue to the market values where there are material differences. Additionally, to remain consistent with SSAP-28's (1990) systematic approach, all immaterial differences will also be revalued to the market values. Thus, revaluation of assets will occur on an annual basis.

Basically, the approach will be similar to that taken for operating leases. In every year of the analysis, the market values will replace the book values of the fixed assets in the calculation of the trajectory. Only the statement of financial position figures will change; the changes will not affect the profit figures contained in the statement of financial performance. Air NZ does not separately disclose the market values of the land and the buildings, so the buildings cannot be depreciated. Furthermore, the company's disclosure is not clear regarding how the book value of the aircraft relates to the different assets. The book value of the jet aircraft (shown in table 7.3) does not equate with the book values of the separate assets disclosed by Air NZ. Therefore, it is not possible to determine what effect the revaluation has on the annual depreciation expense. The major reasoning behind this artificial revaluation is to make use of the most recent data in determining the trajectory. A company should be evaluated on its most recent data; it should not use data that is twenty years old.

There is one major drawback to this process. The market values quoted in table 7.4 include Government valuations; SSAP-28 (1990) specifically prohibits these types of valuations as revaluation amounts. Following SSAP-28 (1990), these figures would not be used in the analysis. However, Air NZ does not provide any independent valuations of their land and buildings; thus, as a proxy for the market value, the Government valuations are the next best provided by the company.

7.3 Air New Zealand's tax accounting policy

The following section outlines the company's tax accounting policy and its effect on trajectory analysis. Section 7.3.1 provides a summary of the applicable accounting standard relating to income tax. Section 7.3.2 discusses Air NZ's choice of tax accounting policy. It reveals a major overstating of profit for much of the period when using one consistent accounting policy.

7.3.1 Summary of New Zealand tax accounting standard (SSAP-12, 1980; 1991)

SSAP-12, accounting for income tax, summarises New Zealand tax effect accounting. There are two versions of SSAP-12 applicable during the period of study: SSAP-12 (1980), which covered the period up to 1 October 1991, and SSAP-12 (1991), applicable after 1 October 1991.

SSAP-12's (1980) preferred tax method was the liability method (paragraph 5.2). This method recorded outstanding tax differences as either assets (future tax benefits) or liabilities (income tax payable), with the tax effect of timing differences to be adjusted annually for any change in the tax rate (SSAP-12, 1980, paragraph 4.7). The other permitted method was the deferral method. This method also recorded any outstanding tax differences as liabilities or assets, although deferred tax already recognised in the balance sheet was not adjusted to reflect changes in the income tax rate (*ibid.*, paragraph 4.8).

However, not all tax differences have to be recognised. If three criteria are met[50], the tax differences and related tax liabilities will not crystallise; therefore, the amounts do not have to be recognised (SSAP-12, 1980, paragraph 5.3). Debit balances in the deferred tax account are only recognised if there is reasonable certainty of recovery in future periods (*ibid.*, paragraph 5.4).

[50] The criteria are: that the entity is a going concern, that there is reasonable evidence to foresee that no liability will arise because of a reversal of timing differences for the subsequent three to five years; and, that there is no indication the situation will change (SSAP-12, 1980, paragraphs 4.11, 5.3).

Under SSAP-12 (1991), only the liability method (detailed above) can be used to account for income taxes (paragraph 4.8). The standard allows two possible bases to account for tax under the liability method: the comprehensive and partial bases. Under the comprehensive basis, the income tax effect of all timing differences is recognised (SSAP-12, 1991, paragraph 4.10). The partial basis only recognises the amount of timing differences that will crystallise in the future[51] (*ibid.*, paragraph 4.11). The standard advocates the comprehensive basis over the partial basis (*ibid.*, paragraph 4.18).

Under the partial basis, when three criteria[52] are met, the income tax effect of certain timing differences do not need to be recognised in the current period (SSAP-12, 1991, paragraphs 4.16, 4.17). Therefore, the company only recognises tax liabilities when they will crystallise in the near future. When timing differences result in a debit balance (future tax benefits), the future tax benefits is only recognised when there is virtual certainty[53] of its recovery (*ibid.*, paragraph 4.20).

Both standard versions required the following (amongst other things) to be disclosed in the notes to the accounts: the tax method used, the amount of income tax losses carried forward, and unrecognised timing differences (SSAP-12, 1980, paragraphs 4.9, 4.14 and 5.10; SSAP-12, 1991, paragraph 5.14). Of the two versions, SSAP-12 (1991) has the more stringent disclosure regime.

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[51] The amount of deferred tax crystallising depends on the following: future profits, reversal of existing timing differences in the future, and that the reversal of timing differences is similar to existing differences (SSAP-12, 1991, paragraph 4.11).

[52] The criteria are: that the entity is a going concern, that there is reasonable evidence that no liability is likely to result of the reversal of timing differences for a considerable future period, and that there is no indication that after this period the situation will change so to crystallise the liabilities (paragraphs 4.15, 5.2). The criteria are similar to that produced in SSAP-12 (1980) (see footnote 50).

[53] There is "virtual certainty" when: future income is sufficient to absorb the debit balance; and the income will take place in periods to allow the absorption to take place (SSAP-12, 1990, paragraph 4.20).

7.3.2 Air New Zealand's tax accounting disclosure

From 1989 – 1999, Air NZ accounted for tax using the partial basis. In the statement of accounting policies, Air NZ stated that "*no deferred taxation is recorded ... as the Directors believe that continuing timing differences are not expected to crystallise in the foreseeable future*" (1989 Annual Report, Statement of Accounting Policies, p. B37). Consequently, no deferred tax liability was recognised in the statement of financial position. In 1993, Air NZ applied the new SSAP-12 (1991) and stated that they used the partial basis to account for income tax. The accounting treatment remained the same.

Only in 2000, after the purchase of Ansett Australia, did Air NZ substantially change its accounting policy. The company changed from the partial basis to the comprehensive basis for accounting for income taxes. The following quote provides their reasoning: "*the comprehensive basis is the preferred basis of [SSAP-12, 1991] and is the basis required by International generally accepted accounting practice. The change has been made recognising the international nature of the Group following the purchase of Ansett Australia*" (2000 Annual Report, Statement of Accounting Policies, p. B8)[54]. In bringing the liability onto the statement of financial position, the company incurred a charge to the statement of financial performance of $786 million. Table 7.5 reproduces the amounts of both recognised and unrecognised tax liabilities disclosed by Air NZ from 1989 – 2001.

The preferred method under SSAP-12 (1991) is to recognise the deferred liability in the balance sheet, irrespective of whether the timing differences will or will not crystallise in the future (paragraph 4.18). Had Air NZ followed this approach from 1991 (when the standard had authoritative support), their performance results would have been significantly different. Instead of recognising a tax liability of $786 million in 2000, the company would have recognised a liability of $196 million in 1992 and adjusted for the changes in deferred taxation in subsequent periods.

	Deferred Taxation (in millions)
	Disclosed in the Notes to the Accounts
31/03/1989	$123.0
31/03/1990	$166.0
30/06/1991	$245.8[1]
30/06/1992	$196.1
30/06/1993	$222.7
30/06/1994	$273.0
30/06/1995	$342.5
30/06/1996	$417.5
30/06/1997	$436.7[2]
30/06/1998	$420.9
30/06/1999	$449.1
	Recognised in the Statement of Financial Position
31/03/1989	$3.6[3]
31/03/1990	$3.7[3]
30/06/2000	$786.2
31/12/2000	$772.2[4]
30/06/2001	$446.4
31/12/2001	$288.1

Table 7.5: Value of Air NZ's Group deferred taxation 1989 – 2001

[1] The 1992 annual report comparative figure was $165.1 million.

[2] The 1998 annual report comparative figure was $418.0 million.

[3] For these two years, Air NZ subsidiaries used the comprehensive basis.

[4] The 2001 annual report comparative figure was $761.5 million.

The treatment of Air NZ's deferred tax liability will be to recognise it as a liability when this was first possible. From 1989, this thesis will apply the comprehensive basis to Air NZ's treatment of income taxes. The use of the comprehensive basis will ensure consistent accounting polices for income tax over 1989 – 2000. This will cause a reduction in profits for many of the years during the period 1989 – 1999,

[54] Air New Zealand's reasoning was not accurate. IAS-12, income taxes, issued in 1996, required the temporary difference approach to account for timing differences, not the comprehensive basis.

although the reduction in profit for the 2000 financial year will not be as large. Table 7.6 details the reductions in profit for the financial years 1989 – 2000.

	Increase (decrease) in Deferred Taxation (in millions)
31/03/1989	$123.0
31/03/1990	$43.0
30/06/1991	$79.8
30/06/1992	($49.7)
30/06/1993	$26.6
30/06/1994	$50.3
30/06/1995	$69.5
30/06/1996	$75.0
30/06/1997	$19.2
30/06/1998	($15.8)
30/06/1999	$28.2
30/06/2000	$337.1

Table 7.6: Reduction in Group Profit to reflect use of Comprehensive Basis

7.4 Other Disclosure Issues

The previous three sections have examined a number of Air NZ's accounting policies in some detail. Those accounting policies affected the majority of the period 1989 – 2001. This section will examine three of Air NZ's accounting treatments, which affected the company for only a specific number of years.

Section 7.4.1 examines the market value of certain Air NZ investments. Section 7.4.2 evaluates Air NZ's treatment of deferred charges. Section 7.4.3 discusses the treatment of financial instruments by the company.

7.4.1 Market Value of Investments

During 1999, Air NZ had an interest in the company Equant N.V. Equant N.V. is a company created from a joint venture between airline companies in the late 1940s.

Air NZ interest was held by its subsidiaries and associates, although it did not immediately record the investment in the statement of financial position. However, it did sell some of its stake and recognise a gain on sale of $27.4 million in the year ended 1999 (this amount being the sale of around 25% of its total interest). In the 2000 annual report, the company recorded a book value for this investment; this was the fair value of Ansett's stake in Equant N.V. Table 7.7 provides the market and book values of the Equant N.V. investment.

	Equant N.V. Investment (in millions)			Difference as a Percentage of Total Assets (Table 7.3)
	Book Value	Market Value	Difference	
30/06/1999	$0	$179.1	$179.1	4.08%
30/06/2000	$20.8	$69.0	$48.2	0.54%
30/06/2001	$0	$0	$0	0.00%

Table 7.7: Value of Air NZ's Group interest in Equant N.V.

For the two years Air NZ owned the shares of Equant N.V., this investment was undervalued in the statement of financial position. Using the auditor benchmark level disclosed in section 7.2.2, 1999 difference between the market and book values is material, as is the 2000 difference (if it is collated with the undervaluation of assets shown in Table 7.4). The trajectory analysis treatment will be the same as that discussed in subsection 7.3.3; the market value of the investment will replace the book value in the calculations. As with the asset revaluations, none of these changes will affect profit.

7.4.2 Deferred Charges

From 1978 – 1990, Air NZ recognised an asset called Deferred Charges. This asset was made up of capitalised interest and commitment fees on loans raised to purchase aircraft assets and were written off over the loan period (1989 Statement of Accounting Policies). However, in 1990, Air NZ changed the policy to one of expensing interest and commitment fees when incurred. Thus, the company wrote off the amount relating to interest ($18.54 million) to retained earnings.

The problem with this accounting treatment is not with the result, but with how the company wrote off the asset. An alternative treatment would have been to write the asset off to the statement of financial performance. The deferred charges were just capitalised expenses; writing them off to the statement of financial performance would ensure consistency with other comparable expenses. The company's treatment actually increased its profits: the company did not incur amortisation of $6.983 million in 1990 because of the write-off of deferred charges to retained earnings.

For the purposes of trajectory analysis, the deferred charges write off will be expensed in the statement of financial performance in 1990. This is a more appropriate treatment and applies the reasoning for the change in accounting policy (expensing interest and commitment fees).

7.4.3 Financial Instruments

A disclosure standard (FRS-31) concerning financial instruments became operative on 31 December 1993. This standard was created to improve disclosures concerning an entity's exposure to financial instruments (FRS-31, 1993, paragraph 3.1). This standard requires companies to provide disclosure about any additional risk faced by having financial instruments. Included in the disclosure are the fair values of financial assets and liabilities arising from financial instruments[55].

Air NZ began disclosing financial instruments in 1994. They provided carrying and fair values of many financial assets and liabilities including loans, finance leases, options and a range of swaps. Table 7.8 provides a list of Air NZ's financial instruments for the period June 1996 – June 2001. Major liabilities (loans and finance leases) have been excluded from the table, because the carrying values seem more

[55] FRS-31 (1993) defines the terms mentioned in this paragraph. A financial instrument is any contract that gives rise to both a financial asset of one entity and a financial liability of another entity. These assets and liabilities maybe either recognised or unrecognised (FRS-31, 1993, paragraph 4.1). A financial asset is either: cash, a contractual right to receive cash or another financial asset, a contractual right to exchange financial instruments under favourable conditions, or, an equity instrument (for example, shares) in another entity (*ibid.*, paragraph 4.2). A financial liability is a contractual obligation to deliver cash or another financial asset to another entity, or, to exchange financial instruments under unfavourable conditions (*ibid.*, paragraph 4.3).

appropriate in the analysis. Air NZ has an obligation to pay only the carrying value of the liability, not the fair value.

	Type of Financial Asset/Liability	Carrying Value (in millions)	Fair Value (in millions)	Difference (in millions)
30/6/1996	Options	$0	$19.5	$19.5
30/6/1997				
30/6/1998	Options	$7.6	$9.9	$2.3
	Interest Rate Swaps	-$0.005	-$0.9	-$0.895
30/6/1999	Options	$5.3	$6.1	$0.8
	Interest Rate Swaps	-$0.163	-$0.401	-$0.238
30/6/2000	Currency Options	$1.7	$0.4	$1.3
	Fuel Options	$6.4	$28.8	$22.4
	Interest Rate Swaps	$0.5	$13.0	$12.5
	Fuel Swaps	$0	$15.5	$15.5
30/6/2001	Currency Options	$1.8	$1.1	-$0.7
	Fuel Options	$19.4	$5.7	-$13.6
	Interest Rate Swaps	-$2.8	-$31.2	-$28.4
	Fuel Swaps	$0	$1.1	$1.1
	Foreign Currency Forward Exchange Contracts	$0	$100.2	$100.2

Table 7.8: Fair and carrying values of select Air NZ Group financial assets and liabilities

The majority of the financial assets and liabilities shown in the table 7.8 are undervalued, if they are valued at all in the statement of financial position. The treatment of these values for trajectory analysis, like for that of revaluation of fixed assets, will be to use the revalued amounts in the analysis. The assets will be artificially changed for each year. This will not affect the statement of financial performance.

7.5 Summary

This chapter has examined a number of Air NZ's accounting policies. The objective of the chapter was to provide a more appropriate valuation of the company's assets,

liabilities and equity, by using the more recent information and various off-balance sheet items disclosed in the notes to the accounts. Consequently, more assets have been recognised for the purposes of trajectory analysis.

The following changes have been made to Air NZ's financial results. Firstly, the disclosed off-balance sheet operating leases have been included in the analysis. Air NZ has an obligation to pay these leases, and only the accounting standard stops the company from recognising them as a liability. Secondly, the company's major fixed assets (jet aircraft and land and buildings) have been revalued to reflect the current year market values. Thirdly, Air NZ's accounts will use the comprehensive basis to account for income taxation over the entire period, rather than only from 2000 onwards. The consequence of this will be to bring the off-balance sheet liability into the analysis.

Several other changes occurred in this chapter. The company's investment in Equant N.V. and a select group of financial instruments have been revalued, again to make use of more recent information. Additionally, an asset write-off to retained earnings has been more appropriately written-off to the statement of financial performance.

Appendix 2 will summarise the changes made by this chapter for the period of study into five tables. This appendix shows the increase in assets from asset revaluations and capitalisation of operating leases. The increases in liabilities are for capitalisation of operating leases and increases in deferred taxation. Finally, the appendix shows the changes made to the asset revaluation reserve, to consolidated profit after tax and retained earnings. The analysis used in the following chapter will use this information to adjust Air NZ's financial statements. The adjusted data will be Air NZ's worst-case scenario.

Chapter 8: Air New Zealand's Trajectory

8.0 Introduction

The previous four chapters have now made it possible to create the trajectory for Air NZ. In chapters 4 and 5, trajectory analysis was evaluated and developed to remove problems with AMH's version and make it testable. Chapter 6 introduced Air NZ and provided its financial results from 1989 – 2001. Chapter 7 examined Air NZ's annual reports to identify and adjust for any creative accounting techniques that overstated profit or understated liabilities.

This chapter will produce three separate trajectories for Air NZ[56]. The first one will evaluate Air NZ from its best-case scenario, using the information provided in the financial statements. The second trajectory is Air NZ's worst-case scenario, adjusting the best-case information for the changes made in chapter 7. The final trajectory is Air NZ's trajectory, which will take a mid-point between the two extremes.

Section 8.1 will evaluate all the separate indicators. It will show for some of the indicators that there is a substantial difference between the two scenarios. Section 8.2 will use the indicators to shape the different trajectories. Additionally, this section provides a sensitivity analysis to check the robustness of the trajectory and shape it using different weights for each indicator. Section 8.3 will summarise the conclusions made in this chapter.

8.1 The indicators of company health

This section will discuss each of the six indicators of company health. Section 8.1.1 outlines the market indicators, which were unaffected by the changes made in chapter 7. Section 8.1.2 discusses the four corporate indicators. Each of the corporate indicators has a best-case and worst-case scenario.

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[56] Appendix 3 shows the figures used to create these trajectories.

8.1.1 The market indicators

As discussed in chapter 3, Air NZ is one of the few companies trading on the NZSE with more than one type of share. The company classified its shares into two classes over much of the period of study, the A class and the B class (see footnote 34). The company combined the two share types back into one share on the 24 December 2001 as part of the New Zealand Government deal to recapitalise Air NZ.

The A class began trading in October 1989, whilst the B class were only publicly tradable from January 1992. However, for the purposes of calculating the market value, the B class were valued at the same amount as the A class until the B class traded separately on the NZSE. Figures 8.1 and 8.2 provide the graphs of Air NZ's share prices and market value respectively from March 1990 – December 2001. The period is chosen since March 1990 was the first date after the A class began trading on the NZSE that Air NZ publicly released either an annual or a half-yearly report.

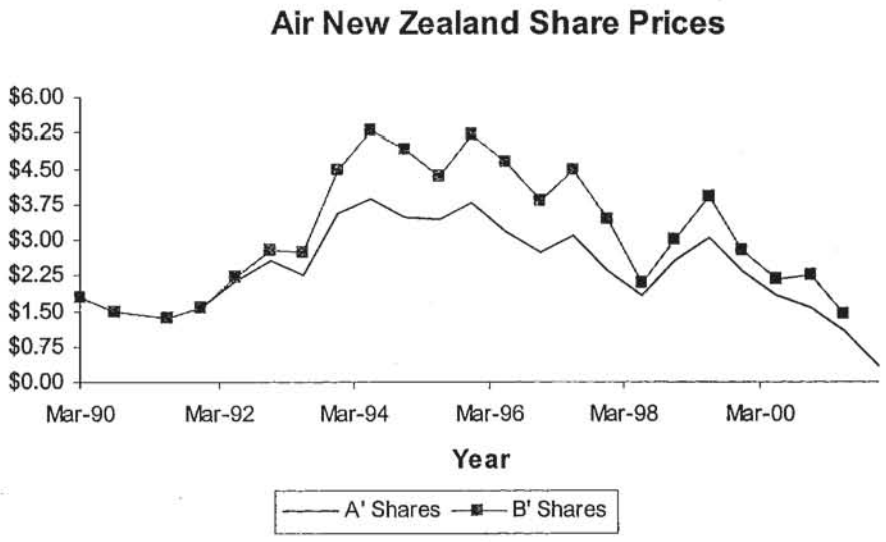


Figure 8.1: Air New Zealand's share prices: March 1990 – December 2001

The Share prices both follow a similar trend from 1990 – 2001, although the B class were valued at a higher amount than the 'A' shares. This is because the B class had a greater demand as foreign nationals could own them. The A and B classes reached their historical highs in June 1994 and again in December 1995. From the latter date,

Air NZ's share prices fell consistently (apart from two brief recoveries in December 1996 – June 1997 and June 1998 – June 1999) to a value of $0.35 in December 2001.

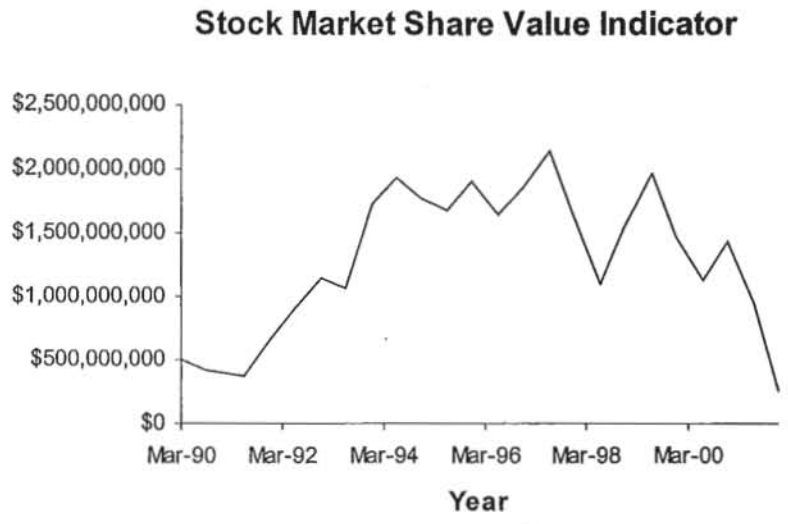


Figure 8.2: Air New Zealand's market capitalisation: March 1990 – December 2001

The stock market share value grew consistently from June 1991 to June 1997 (when it exceeded $2 billion market capitalisation). Air NZ had three major share issues[57], which increased the market value without a similar change in the share price. Additionally, Air NZ reclassified some of the A class to the B class, increasing foreign ownership (see chapter 6). This increased the market value since the B class always had a higher value. However, like the share prices, the market value never really recovered from its high in June 1997 and ended at an historical low of $265 million.

To summarise, the share prices fell from December 1995, whilst the market value fell from June 1997. Any recoveries in either indicator never lasted more than 12 months. Finally, the fall in the indicators after the purchase of remaining share of Ansett in June 2000 was swift: the A class fell 81% whereas the market value fell 77%.

[57] These were in August 1991 (issuing 140 million shares), November 1996 (119 million shares) and November 2000 (189 million shares).

8.1.2 The corporate indicators

This subsection will discuss each of the four corporate indicators. Using the process outlined by Robb (1999), section 8.1.2.1 will examine cumulative OCFAID and cumulative retained earnings. Section 8.1.2.2 outlines the company's ROCE indicator. Section 8.1.2.3 produces Air NZ's debt to equity ratio. Each section will discuss both the best case and worst-case results.

8.1.2.1 Operating Cash Flows after Interest and Dividends (OCFAID)

Figures 8.3 and 8.4 provide the graphs of the best-case and worst-case scenarios of the OCFAID analysis. There are no differences between cumulative OCFAID in the two graphs. From December 1992 onwards, Air NZ reclassified capitalised interest from an operating activity to an investing activity. However, both scenarios were adjusted for this change by reducing OCFAID by the amount of capitalised interest from December 1992, thus ensuring consistency. The differences between the best and worst-case cumulative retained earnings relate to the changes made in chapter 7.

The important thing to note from figures 8.3 and 8.4 is the fact that cumulative OCFAID was always positive from 1989 – 2001. It fell in only four six-month periods (six-months ending June 1991, June 1998, June 2001 and December 2001). Cumulative OCFAID exhibited strong growth from December 1991 to December 1996 (average six-month growth of 22.7%) and again from December 1998 to December 2000 (average growth of 6%). The problems caused by Ansett coupled with high fuel prices and a weak New Zealand dollar caused cumulative OCFAID to fall by 9.5% over the 2001 calendar year. Nevertheless, cumulative OCFAID indicates that Air NZ continued to create cash from its operations and was in no failure situation through a lack of cash creation.

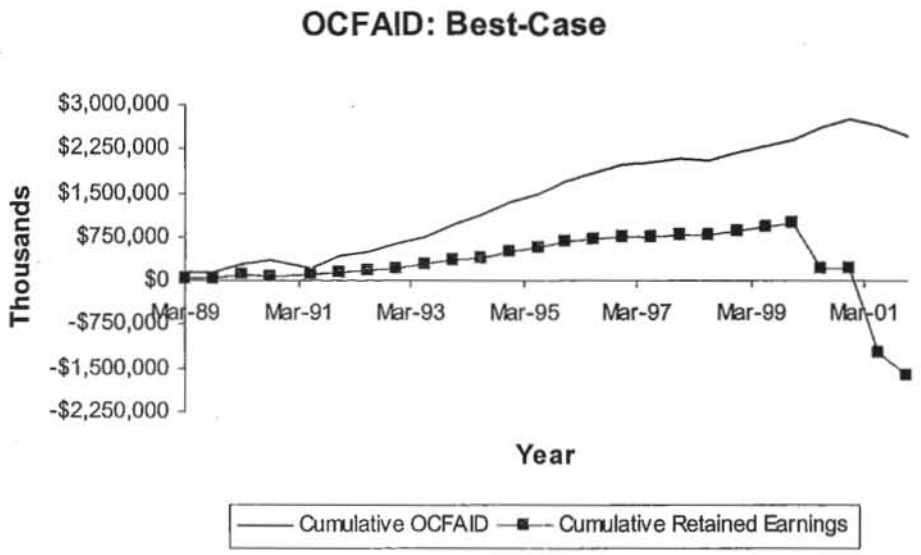


Figure 8.3: OCFAID best-case scenario

The cumulative retained earnings (CRE) differ substantially between the two graphs. In the best-case scenario, CRE only fell once (in September 1990) before the change in accounting policy in June 2000. Growth was substantial from June 1991 to December 1999 with average six-monthly growth of 15%. However, the three major falls from June 2000 more than removed the eight years growth, reducing CRE by 260% by December 2001.

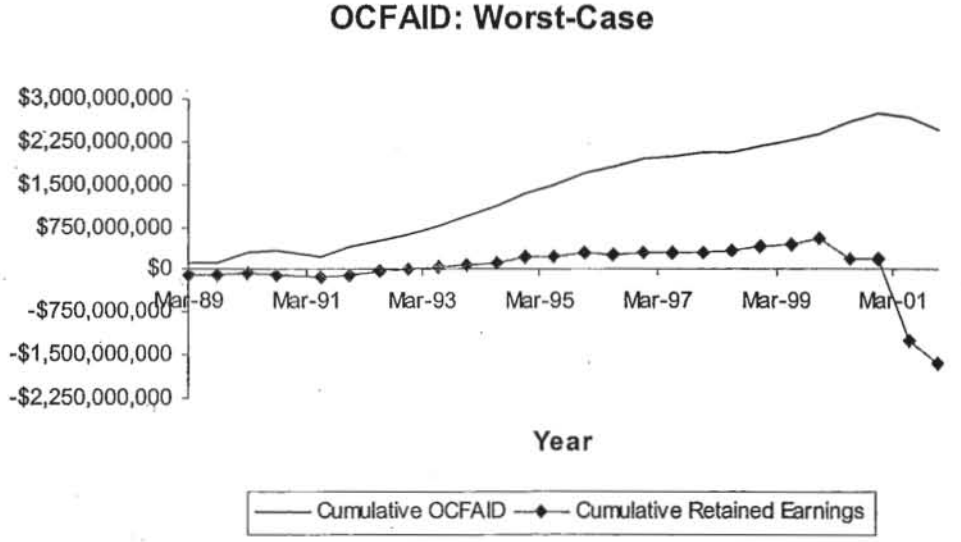


Figure 8.4: OCFAID worst-case scenario

Under the worst-case scenario, CRE was negative in March 1989 and remained that way until June 1992. Average six-monthly growth of 40% was again impressive from June 1991 to December 1999, even allowing for losses made in the six-months ending June 1991, June 1995, June 1996 and June 1997 (these were caused by increases in deferred taxation). The major losses made by Air NZ after Ansett became a subsidiary still affected the company, reducing CRE by 400% by December 2001.

Both graphs show that Air NZ struggled to create similar after-tax profits as they did cash. A widening gap between the two appeared from June 1991, this never closed over the following ten years. At CRE's height, the gap between that and cumulative OCFAID was $1.4 billion for the best-case and $1.86 billion for the worst-case scenario. Using Robb's (1999) terminology, Air NZ was a "cash-cow", a company that made cash, but not necessarily any corresponding profits.

8.1.2.2 Return on Capital Employed (ROCE)

Figures 8.5 and 8.6 provide graphs of the best-case and worst-case scenario ROCE indicator respectively. To recap, ROCE is calculated by dividing earnings before interest and tax (EBIT) by capital employed. There were two major problems in determining this indicator. Firstly, until June 2001, Air NZ did not produce the EBIT figure. However, the company provided enough information to produce a proxy operating profit (or surplus) before tax plus the net interest expense. This proxy was used from 1989 – 20001 to provide continuity of data and a consistent measurement base (the numerator would be calculated in the same way for each year).

Secondly, until December 1993, Air NZ's half-yearly report did not provide enough information to determine the proxy EBIT figure (they did not disclose the net interest expense). Thus, for the first four years ROCE was calculated on an annual basis, whereas for the remainder of the period it was calculated on a six-monthly basis. To remove this inconsistent measurement, the EBIT proxy from March 1989 to June 1993 was halved: half of which was placed in the first six months, the rest in the second six months. Whilst this is an arbitrary split, it is the best way of ensuring that the indicator was measured on a six-monthly basis[58].

[58] Using the data with either the inconsistent measurement or the arbitrary split did not significantly change the shape of the trajectory.

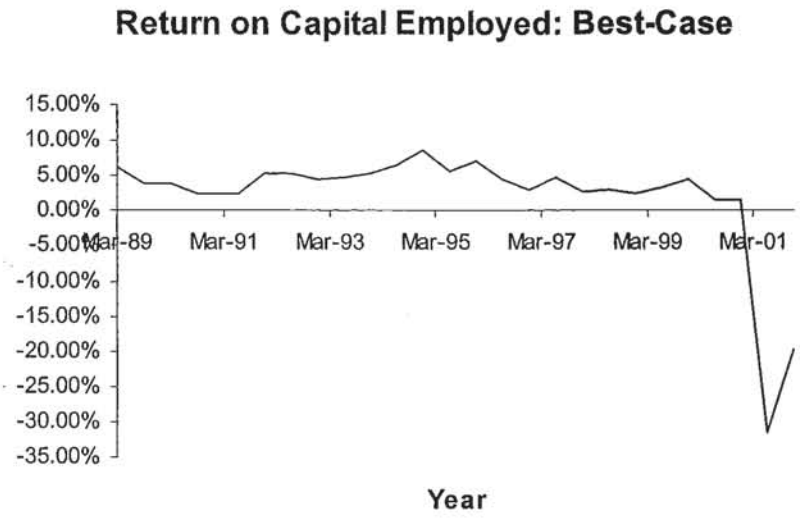


Figure 8.5: ROCE best-case scenario

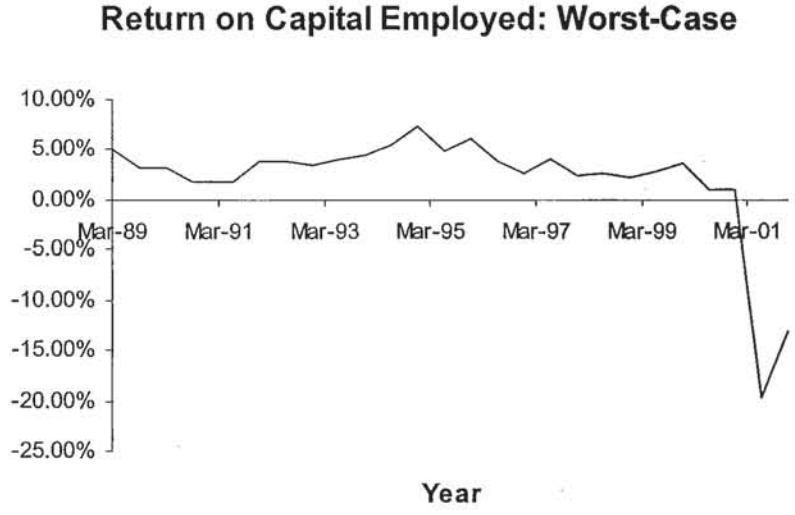


Figure 8.6: ROCE worst-case scenario

The only difference between the best-case and the worst-case scenarios relates to the value of the denominator, capital employed. Capital employed is calculated by adding together total equity and total long-term liabilities. After making the changes in chapter 7, this figure differed for each scenario. Not surprisingly, the two graphs have the same shape; indeed, the only difference is the percentages on the vertical axis. Therefore, the following discussion will refer to both of the graphs.

Until June 2001 and the problems occurring in that year, ROCE remained positive. There was, however, very little growth in the indicator over the previous twelve years. The average return over the positive period (March 1989 – December 2000) was 4.27% (worst-case scenario: 3.5%), which is less than the starting point in March 1989. Only in three half-year periods (periods ending June 1994, December 1994 and December 1995) did the return on capital employed exceed that made in March 1989. Further, the indicator declined from December 1995 with only brief recoveries in June 1997 and December 1999. Thus, the graphs show that the company never regained its profitability in the latter 1990s.

The losses in June 2001 and December 2001 show that the Ansett debacle severely affected Air NZ's operations. The respective losses for each period were 32% and 20% (worst-case: 20% and 13%). It seems somewhat illogical that the worst-case scenario's losses are not as bad as the best-case's. However, this is because the worst-case scenario created a larger capital employed than the best-case, thereby spreading the loss over a larger base.

To summarise, Air NZ remained profitable on an operating basis until June 2001. The decline in return on capital employed coincided with Air NZ's initial purchase into Ansett Australia, although, only when Air NZ consolidated Ansett did the return become negative.

8.1.2.3 Debt to Equity Ratio

Figures 8.7 and 8.8 provide the debt to equity ratio for both the best-case and worst-case scenario. Firstly, for the best-case scenario, the ratio (calculated by dividing total liabilities by total equity) only exceeded 2:1 once (in June 1991) in the period March 1989 – December 1999. Indeed, the ratio remained around 1:1 from June 1996 until December 1999. This indicates that until Ansett became a subsidiary, Air NZ was a low risk company with a relatively small amount of debt. From June 2000, the ratio worsened; the ratio was 4.6:1 in June 2000 and reached a high of 31:1 by December 2001. The best-case scenario suggests that Air NZ became considerably riskier during the last 18 months of the period.

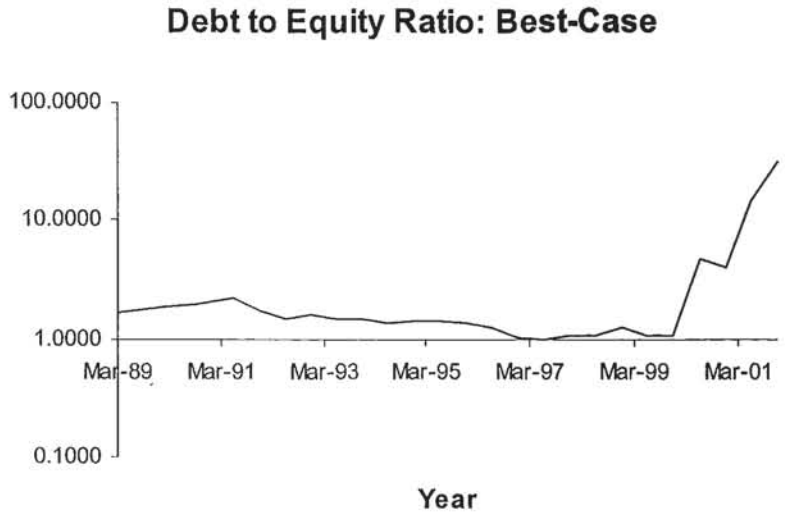


Figure 8.7: Debt to Equity ratio best-case scenario

The worst-case scenario is significantly different from figure 8.7. As discussed in chapter 7, the major changes that affected the company's debt and equity were the capitalisation of operating leases, an early adoption of the comprehensive tax basis and revaluation of selected assets to market values. During the period up to December 1999, the ratio never fell below 1.7:1. However, from June 1990 – December 1997, the ratio exceeded 2:1. The higher ratio over this period suggests that Air NZ was a lot riskier than was suggested from examining just the statement of financial position. Like the best-case scenario, the ratio deteriorated from the consolidation of Ansett; the ratio was 4.5:1 in June 2000 and worsened to a high of 13:1 in June 2001. The conclusion from the previous paragraph stands: Air NZ's riskiness became apparent after the consolidation of Ansett in its accounts.

Why did Air NZ's debt to equity ratio deteriorate to such an extent from June 2000? From June 2000, Air NZ consolidated Ansett in its accounts. As at June 2000, Ansett contributed $4 billion in assets and $3.1 billion in liabilities, but no increase in equity[59]. Coupled with the loss made because of the change in the tax accounting policy, it significantly increased debt relative to equity. The consolidated net losses made in the six-months ended June 2001 and December 2001 increased the ratio even more, since equity decreased whereas debt remained relatively constant.

[59] Appendix 1 provides a summary of how Air NZ treated the purchase of Ansett in its accounts.

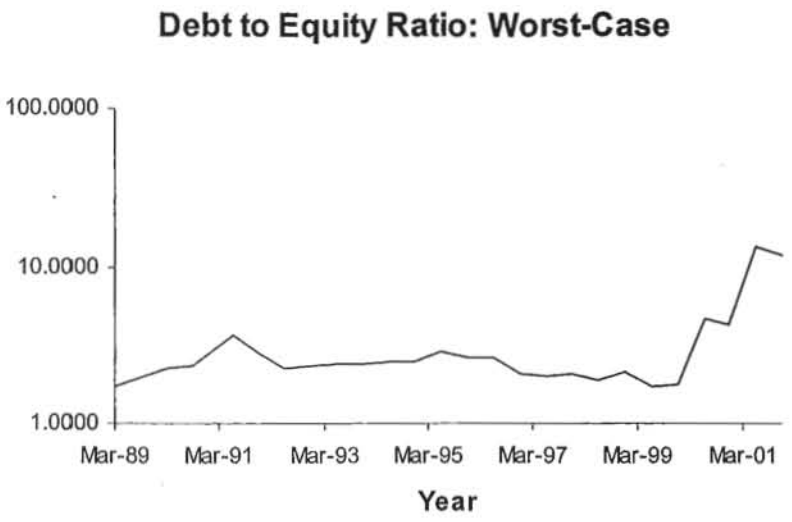


Figure 8.8: Debt to Equity ratio worst-case scenario

A final point concerning figures 8.7 and 8.8: they may not be entirely accurate. From October 1996, Air NZ held a 50% stake in Ansett. Air NZ also nominated three of the six members of Ansett's board of directors. However, Air NZ was not required to consolidate Ansett in its books until June 2000. An early consolidation of Ansett from 1996 may have significantly changed the ratio from this time. That is, the ratio may have deteriorated as early as December 1996, instead of as late as June 2000.

To summarise, Air NZ's debt to equity ratio remained relatively constant over the period until March 1989 to December 1999. However, with the consolidation of Ansett, the ratio declined rapidly from June 2000. This shows that Air NZ became more financially risky over the period of study.

8.2 Air New Zealand's Trajectory

This section will produce Air NZ's trajectory. The first step will be to standardise the indicators as per the discussion in section 6.3.3. Figures 8.9 and 8.10 provide graphs of the standardised indicators. All of the indicators were standardised to a base of 100 in March 1990. March 1990 was chosen, as it was the first period that all of Air NZ's indicators were measurable using publicly available information.

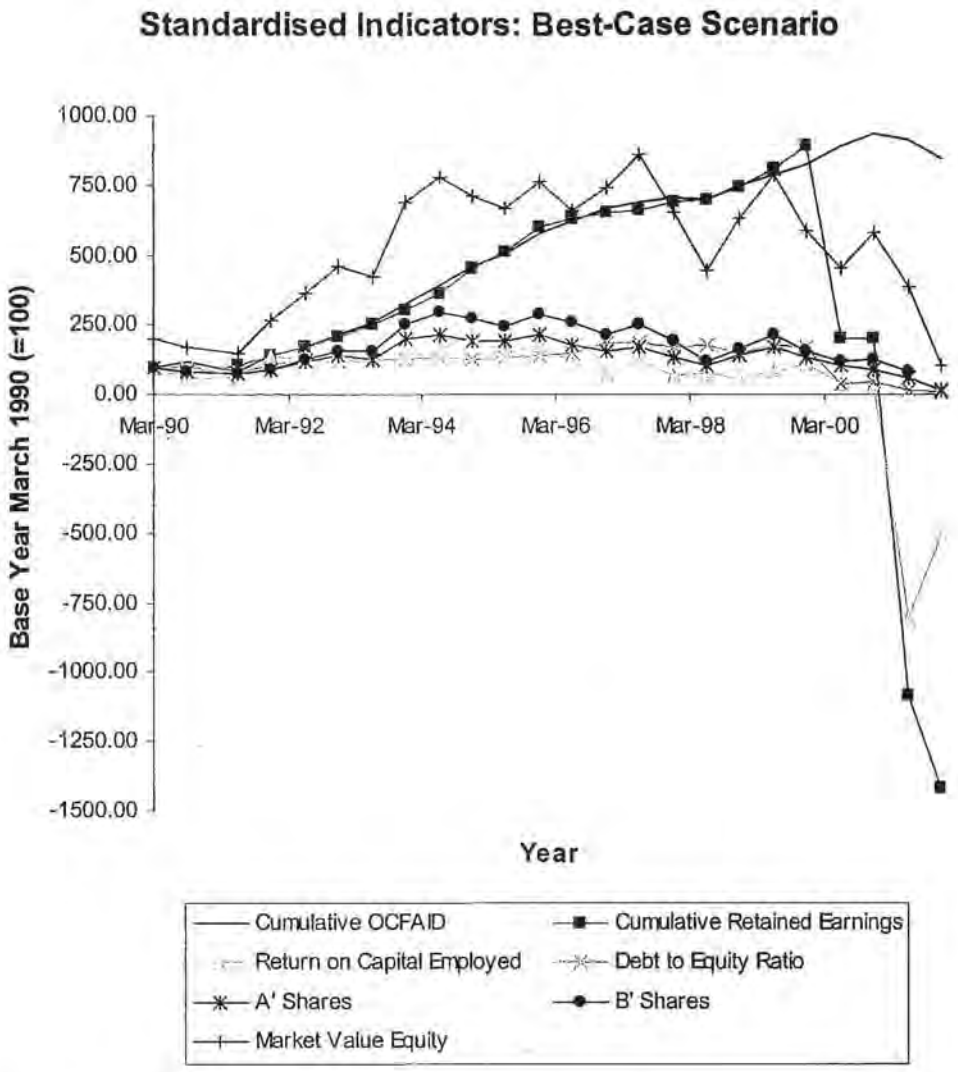


Figure 8.9: Standardised Indicators best-case scenario

The assumption here is that as an indicator increases, so will company health and the trajectory. However, this is not entirely true for all of the indicators. The debt to equity ratio measures financial risk; a higher ratio suggests a riskier company and a greater chance of failing. Therefore, to ensure consistency with the other indicators, the inverse of the debt to equity ratio is used when calculating the trajectory (that is, the higher the indicator, the lower the risk, which is better for a non-failing company). Figures 8.9 and 8.10 include the inverse debt to equity ratio.

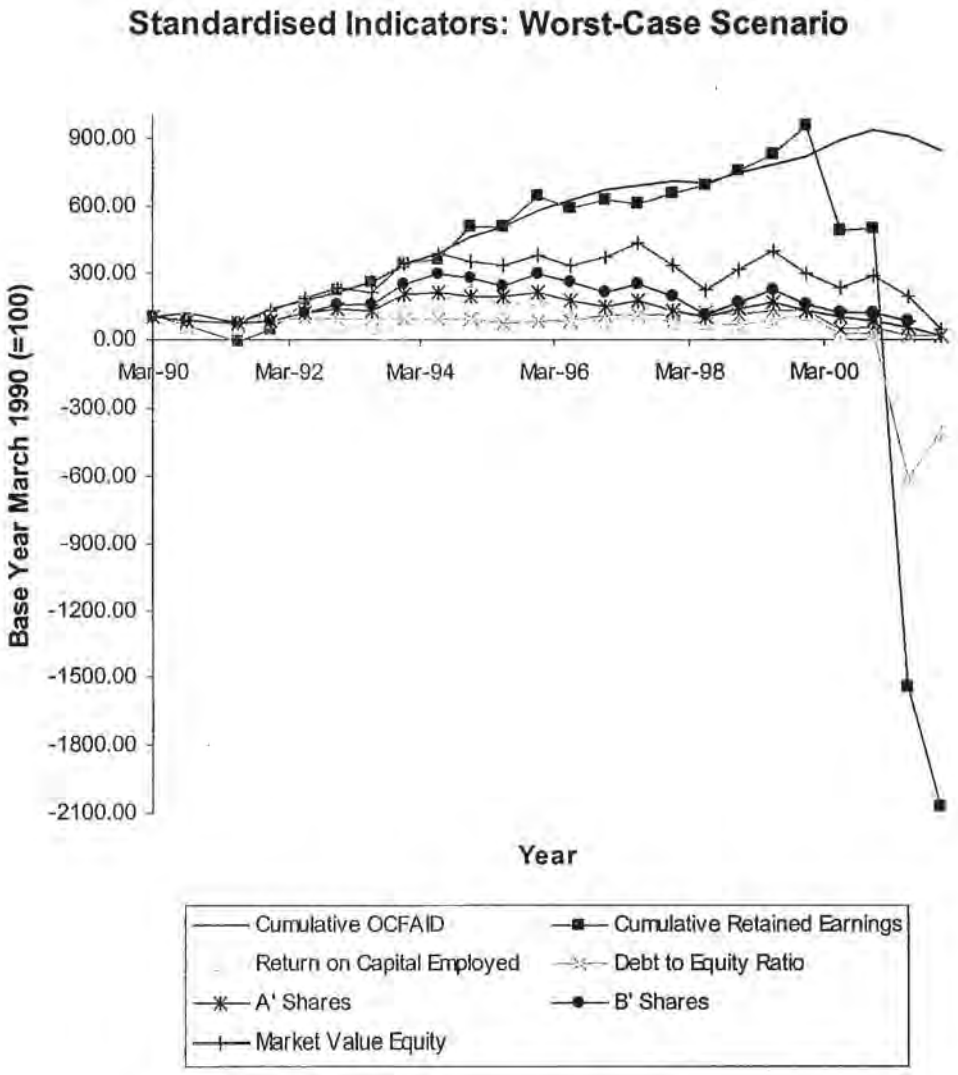


Figure 8.10: Standardised Indicators worst-case scenario

The second step is to combine the indicators into one trajectory. Using the method summarised in chapter 5, a weighted-average is used to create the trajectory from the individual indicators. Figure 8.11 provides both the best-case and worst-case scenario trajectories. These trajectories are created using an equal weighting for each of the indicators.

As expected, the trajectories follow a similar shape to the indicators. The fallout from the 1991 Gulf-War, which increased fuel prices and reduced tourism travel, caused the initial drop from 1990 – 1991. The trajectory improved until December 1995, whereby it remained reasonably constant until December 1999. The drop in June 2000 was due to both the consolidation of Ansett and the effect of the comprehensive

tax basis on Air NZ's profit. Finally, several factors including the collapse of Ansett, historically high fuel prices and a general slump in the international aviation industry caused the drop in 2001.

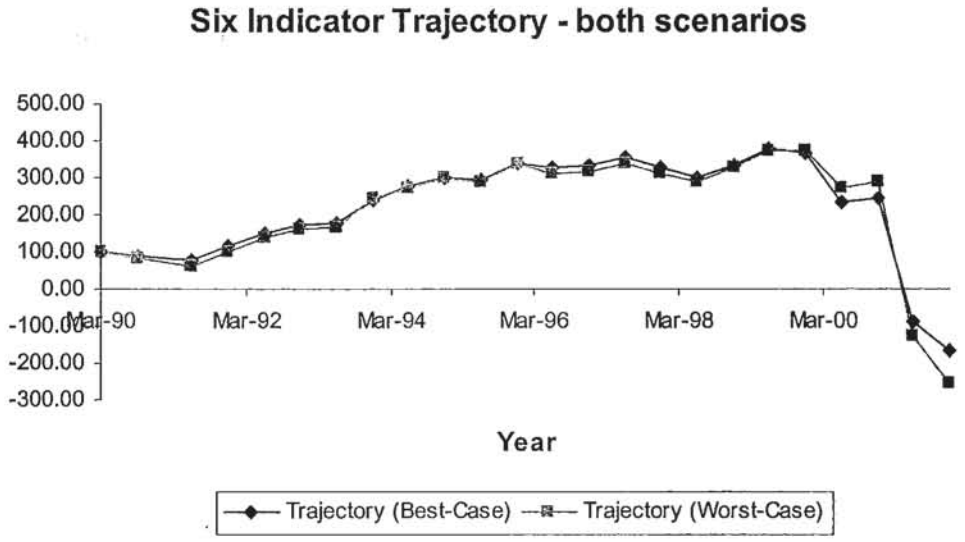


Figure 8.11: Best-case and worst-case trajectories: equally weighted indicators

The final step is to merge the above two trajectories into the final trajectory. The process involves simply taking the average of the two scenarios and placing the company trajectory in a midpoint between them. Figure 8.12 shows the graph of Air NZ's trajectory. This trajectory is very similar to the above scenario trajectories, which is because the scenarios are almost identical in shape.

Does this trajectory meet one of the three hypothesised trajectories? Possibly, Air NZ followed the Type 3 trajectory of failure. Figure 8.12 could be the Type 3 trajectory for two reasons. Firstly, Air NZ is a mature company that has been operating for over sixty years. Secondly, there is a plateau (of six months) between the two collapses (June 2000 and June 2001 – December 2001). AMH did mention that a plateau could be as short as one or two months, however they also believed that such a short plateau was very unlikely (Argenti, 1976, p. 164; McRobert and Hoffman, 1997, p. 124).

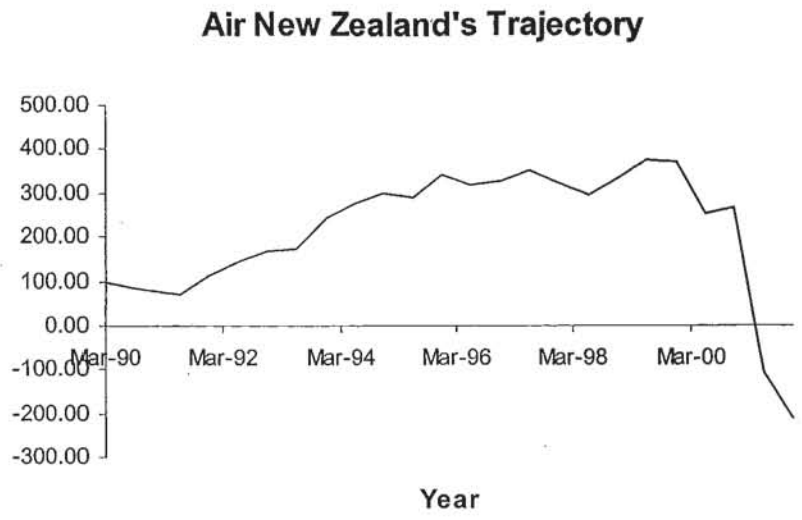


Figure 8.12: Air New Zealand's trajectory: March 1990 – December 2001

The reasoning in the previous paragraph that Air NZ is a Type 3 company is based on the twelve-year trajectory. However, Air NZ's operations changed considerably from December 1996. From then, the company ceased to be a regional New Zealand airline and instead became an Australasian carrier. Examining the trajectory from December 1996 (and standardising from this date) shows a different trajectory, more akin to the Type 1. Figure 8.13 shows that Air NZ's trajectory did not grow from December 1996; instead, it remained relatively stable until June 2000, when the collapse began.

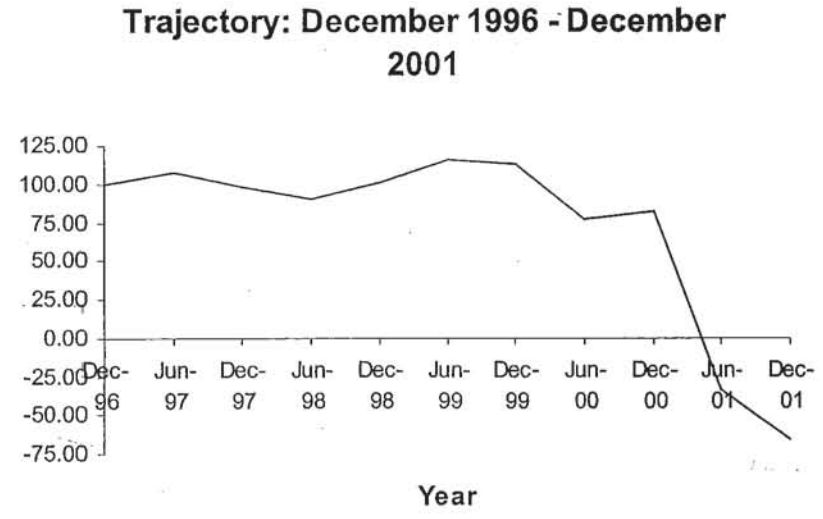


Figure 8.13: Air New Zealand's Trajectory after the investment into Ansett Holdings

This paints a different picture of the company; the Air NZ trajectory may have transferred from a non-failing trajectory (up to December 1996) to a failing trajectory (from December 1996). The company's trajectory grew from 1990, which is unlike the typical Type 3 company. Further, the plateau (suggested from December 2000 – June 2001) does not happen at a poor state of health, but actually at the excellent state of health (see section 8.2.2). The proposition that Air NZ is a Type 3 company is incorrect. Instead, Air NZ transferred from the non-failing to the Type 2 failing trajectory. Figure 8.12 is similar in shape to Argenti's (1976a) exhibit 8.8, which figure 8.14 reproduces. The trajectory is not the Type 1 trajectory since a company on that trajectory does not succeed; it is obvious that Air NZ did so until December 1996.

To conclude, Air NZ, although it did not fail, transferred to the Type 2 failing trajectory during the period 1990 – 2001. Therefore, the proposition that Air NZ followed the Type 3 trajectory is incorrect. The following two subsections will conclude the discussion of Air NZ's trajectory by raising the following questions: firstly, should equally weighted indicators create the trajectory, and secondly, what state(s) of health was Air NZ in during the period?

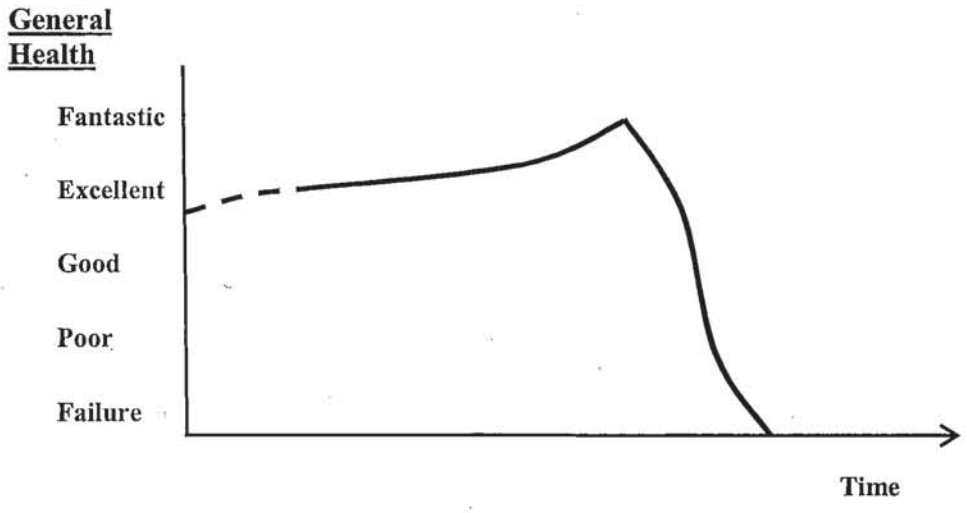


Figure 8.14: A switch from a non-failing trajectory into a Type 2 failure trajectory

Source: Argenti (1976a), Exhibit 8.8, p. 168.

8.2.1 Different versions of the Trajectory

The trajectory produced above is calculated by equally weighting the individual indicators. However, in chapter 5, it was suggested that the indicators should have different weights, to reflect their relative importance towards the survival of a company. This subsection will examine whether the trajectory changes shape as the indicator weights change.

8.2.1.1 Sensitivity analysis

A sensitivity analysis was used to apply different weights to each indicator, to both check for robustness in calculating the trajectory and to adjust for the relative importance of each indicator. This process involved calculating the trajectory with the indicators having different weights, and comparing them with the equally weighted trajectories shown in figure 8.11. Appendix 4 provides several versions of the trajectory after applying the sensitivity analysis. Each graph provides both the appropriate (either best-case or worst-case scenario) trajectory given in figure 8.11 and the adjusted trajectory.

Graphs 1 and 2 (as shown in appendix four) double the weighting of the corporate indicators whilst leaving the market indicators unchanged. Graphs 3 and 4 do the reverse, by doubling the weight of the market indicators, whilst the corporate indicators have a weighting of one. Graphs 5 – 12 weigh the indicators in a random matter. Appendix 4 provides the ordering of the indicators for each graph. Finally, Graphs 13 – 26 double each individual indicator only; for example, graphs 13 and 14 double cumulative OCFAID, whilst leaving the others unchanged.

The graphs provided in the appendix show that the new trajectories are not exactly the same as those in figure 8.11, although they follow a similar shape. All the graphs show a decline in the trajectory until June 1991. They all show strong growth until December 1994. From December 1994, the different trajectories show uncertain and volatile growth until 1999. Importantly, all the graphs exhibit the major collapse in the trajectory from December 1999 – December 2001.

These graphs (which are only a sample of the entire analysis) show that creating the trajectory is robust. Irrelevant of the individual weighting of the indicators, the resulting graph still shows that Air NZ followed the modified Type 2 failure trajectory. This does not mean that the use of a weighting system within the parameters set is less appropriate in creating the trajectory; instead, it means that it makes no substantial difference to Air NZ's trajectory.

8.2.1.2 Corporate and Market Trajectories

A specialised version of the trajectories was examined during the sensitivity analysis. This involved giving the corporate or market indicators a weighting of zero, thus producing a corporate and a market trajectory. Appendix 5 provides the graphs of the market trajectory and the best-case and worst-case scenarios corporate trajectories. Two points are apparent from these graphs.

Firstly, the corporate trajectories more closely match the actual trajectories than the market trajectory. The corporate trajectories show a steady increase from June 1991 – December 1999, when the collapse began. The market trajectory is more volatile and shows that it began declining from heights reached in June 1994 and again in December 1995.

The second point relates to the values each type of trajectory can take. The market trajectory cannot become negative, because company shares and market capitalisation cannot be negative. Thus, the market trajectory will only reach zero when the company delists its shares from the stock exchange or the company fails. The corporate trajectory can go below zero, which makes it more difficult to determine when failure may happen. In other words, the closer the market trajectory gets to zero, the closer to failure; the more negative the corporate trajectory is, the greater the chance of failure.

The impact of the two different types of indicators is as follows. The corporate indicators can go negative; they will have, of course, a greater negative impact on the trajectory than the market indicators. Alternatively, the market indicators can only have a positive impact on the trajectory since they cannot go negative.

The apparent closeness of the corporate trajectory to the actual trajectory may mean that only the corporate indicators need to be calculated when creating a trajectory. Thus, an analyst would not have to calculate a share price proxy for a company that does not trade upon a stock exchange. Instead, the corporate trajectory can be used as a close approximate for the actual trajectory. However, additional research would need to be done to determine whether this is the case.

8.2.2 The completed trajectory for Air NZ

Using the discussion of the indicators in section 8.1, and the distinguishing characteristics of the different states of company health in chapter 5, it is clear at what time Air NZ was in particular states of company health. Air NZ began the trajectory in a good state of company health. The corporate indicators were generally positive but stagnant during the period March 1989 – March 1990. It remained in a good state of health until December 1993, where the growth in profits, cash and the performance of the company's shares was enough to break into an excellent state of health in June 1994.

Air NZ continued in an excellent state of health until December 1999; the losses made in June 2000, however were enough to drag the trajectory back to the good state of company health. Finally, the general fragility of the company in 2001 (the collapse of Ansett, massive company losses, reductions in OCFAID and a woeful share performance) caused the company to enter the poor state of health, where it stayed until December 2001.

Figure 8.15 reclassifies the trajectory shown in figure 8.12 into the format suggested by AMH (the horizontal axis time and the vertical axis the states of company health).

Figure 8.15: Trajectory of Air New Zealand: 1990 – 2001

8.3 Summary

This chapter has gone through the process of producing a company trajectory. Using Air NZ as a case study, it has shown that using the six indicators would produce a trajectory that meets one of the hypothesised trajectories. Specifically, Air NZ followed a modified Type 2 failure trajectory.

The company's performance was solid until the consolidation of Ansett as a subsidiary in June 2000. The consolidation plus the change in the tax accounting policy adversely affected the company to an extent that it did not recover by December 2001. Indeed, in that fateful year, Ansett collapsed, causing Air NZ to record its largest corporate loss. Furthermore, the company struggled to continue in a radically changing trading environment. By December 2001, Air NZ continued to lose cash and incur losses, and its share price collapsed. Realistically, only the New Zealand Government remained between it and failure.

The trajectory faithfully graphs Air NZ's performance, from the heights in the 1990s to the collapse in 2001. At first glance, the trajectory looks like a Type 3 trajectory, since it declines, remains on a plateau, and collapses a second time. However, the company's actual trajectory seems to be a modified Type 2 trajectory (a transfer from

a non-failing company to the Type 2 collapse) because Air NZ does not fall to the plateau at a poor state of health, but instead at a good state of health. The company only began collapsing in June 2001; the fall in June 2000 is more of a decline, since it did not reduce the trajectory markedly.

The following chapter will discuss the limitations inherent in the thesis. Additionally, Chapter 9 will suggest avenues of future research in the area of trajectory analysis.

Chapter 9: Limitations and Further Research

9.0 Introduction

The preceding chapters have examined trajectory analysis to determine whether, as AMH have argued, it could be useful as a failure classification model. However, before stating the conclusions of this thesis, it seems appropriate to discuss both the research limitations, and to suggest areas of further research. Both of these are covered in this chapter.

Section 9.1 discusses the limitations inherent in this thesis. Section 9.2 outlines the major areas of further research. A summary follows in section 9.3

9.1 Research Limitations

There are four major limitations with this thesis. These are the following: non-financial information, use of a financial model, choice of indicators and Air NZ's data. The following subsections discuss each of these.

9.1.1 Non-financial information

One of the innovative parts of AMH's theory of corporate failure is the use of non-financial information. Many researchers (especially Storey *et al.*, 1987; Keasey and Watson, 1987) commentated that a combination of non-financial and financial information in classifying failure companies, has a higher success rate than using either type of information separately. Both Argenti's (1977; 1983; 1984) A-score model and trajectory analysis (as produced by AMH) made use of non-financial information when classifying companies as failed or non-failed. In spite of all this, the changes made to trajectory analysis removed all of AMH's suggested non-financial indicators.

Nevertheless, it was appropriate not to use non-financial indicators in the analysis of Air NZ. AMH did not provide methodology to measure any of their indicators. Whilst there is a simple way to measure financial information (financial statement analysis), the same cannot be said with non-financial information. At an early stage in the development of the trajectory analysis theory, it was decided to use a methodology that was as simple as possible, so a result could be obtained. That there was no use of non-financial information is unfortunate, but further research into including this type of information into the analysis is possible (see below).

9.1.2 Financial Model

Consequently, the indicators used to measure the trajectory were of a financial nature. Argenti, in particular, was highly critical of using financial information in classifying failure. Argenti (especially 1976a, 1976c, 1980; 1986b) believed that the use of creative accounting techniques would erode any usefulness of financial information. Thus, there is a serious question mark over the usefulness of financial information, especially as companies in financial distress will employ creative accounting techniques to mask declines in profitability (Argenti, 1976a, p. 143).

This limitation cannot be avoided when using financial information. However, by attempting to determine and adjusting for creative accounting techniques, it is hoped that the scope for unreliable financial information is minimised.

9.1.3 Choice of Indicators

A limitation exists with respect to the choice of indicators. The indicators used in this thesis were chosen primarily because they were easy to calculate and they could be applied to any given company. However, it is possible that there are other measures (either corporate, non-financial or market indicators) that are more appropriate to measure the trajectory with. The lack of research into trajectory analysis contributes to this limitation. Since no known study has attempted to produce a company trajectory, no study, apart from AMH, has suggested what indicators should be used to measure the trajectory. Therefore, any indicators chosen are subject to a lack of empirical use in determining company trajectories. Only further research into which

indicators researchers should use to measure trajectories will reduce this particular limitation.

Even so, it is pleasing to note that the indicators chosen have produced a robust model that faithfully modelled Air NZ's performance. Thus, the indicators seem to be a good measure for Air NZ's trajectory.

9.1.4 Air New Zealand data

The major limitation here relates to the reliability of the data used to measure Air NZ's trajectory. Generally, all publicly available information such as financial statements has a reliability problem, as the reporting entity can change accounting policies that reduce internal consistency. Additionally, as financial statements summarise the detailed internal management accounts, a lot of information is lost in their production. These reliability problems are always present, and are very difficult to control. However, by evaluating Air NZ's accounting policies, as was done in Chapter 7, unreliable information should be minimised.

9.2 Recommendations for further research

Because of the lack of research into trajectory analysis and the limited scope of this thesis, there is considerable range for further research in this topic. The following subsections identify and discuss the various types of additional research.

9.2.1 Research into the actual theory

During the evaluation of AMH's trajectory analysis, many methodological issues presented themselves as worthy for subsequent research. These issues include, the indicators used to measure the trajectory, the need (if any) for a weighting system, the effect of creative accounting upon the trajectory and an examination of the number of failure trajectories.

This thesis used only a few indicators to measure the trajectory, none of which were objectively chosen. An examination into the large number of potential indicators seems to be appropriate to determine which indicators are best suited to measure the trajectory. It may be that different industries have a particular set of indicators to measure their trajectories after making use of industry-specific information. Included in the above should be an analysis of non-financial indicators, although the major difficulty for these indicators is in how to quantify them. Finally, any subsequent research into indicators should investigate the relative importance of the indicators. If some indicators become more important as failure approaches than others (as suggested by Sheppard, 1994), then these indicators should have a greater influence on any company trajectory.

A second area of potential research relates to the use of a weighting system. The results of this thesis used an equal weighting system, after a sensitivity analysis indicated that Air NZ's trajectory shape did not substantially change after using different weights for the indicators. However, if some indicators are found to be vitally important in determining failure, then these indicators should have a greater weighting in creating the trajectory. The weighting would be of necessity, subjective in keeping with Argenti's "*somewhat subjective construction*" (1976a, p. 153). Possibly, the process used by Robertson (1983) would be appropriate to create a subjective weighting system.

The results in this thesis showed that Air NZ's best-case and worst-case scenarios were very similar. This indicates that the changes made to Air NZ's data to control for creative accounting did not radically affect the resulting trajectory. Possibly, this means that Air NZ did not use creative accounting techniques, or that the process to control for them failed. Alternatively, creative accounting techniques may not affect the trajectory. Whichever the case, an examination into the effect of creative accounting techniques on the trajectory is suitable. If creative accounting does not affect trajectory analysis, it would be an invaluable company performance measurement.

Finally, AMH inductively chose the number of failure trajectories and their individual shape. Even allowing for the fact that some companies can transfer from failing to

non failing trajectories (as was the case for Air NZ), it seems unlikely that there are only three or four (including the hypothetical example provided in chapter 6) failure trajectories. While previous research suggests the existence of three failure trajectories (see Laitinen, 1991), this has not been investigated using actual trajectories. New research could examine the trajectories of many failed companies to determine whether the three hypothesised trajectories exist, and whether we need more than three trajectories to explain all company failures. As Argenti (1976a) argued, once we know in what ways companies fail, we can try to avoid their mistakes to ensure that fewer companies fail in the future.

9.2.2 Research into the case study

There is one area of additional research into Air NZ specifically. Air NZ had not failed by the end of 2001; instead, the New Zealand Government purchased an 82% equity stake in the company, in an attempt to turn the company around. A valuable area of further research would be an investigation into the New Zealand Government's turnaround attempt of Air NZ. The major area of interest would be whether the new management team can make Air NZ profitable again and if trajectory analysis can graphically represent the turnaround over time.

9.3 Summary

This chapter has outlined limitations in this thesis and potential areas of further research. There were four major limitations discussed, which relate to the research methodology used to measure company trajectories and Air NZ's data. While these limitations do reduce the accuracy of the reported results, it is important to discuss them before concluding the research into trajectory analysis.

As a consequence of this thesis, there are two major areas of additional research. Since this is an early study into the operations of trajectory analysis, there is still the potential for further research into various aspects of the theory. Additionally, research into Air NZ itself is available, with the current New Zealand Government attempt to turn the company around.

Chapter 10: Summary and Conclusions

The preceding chapters of this thesis have provided the first in-depth study into AMH's trajectory analysis theory. Whilst Argenti (primarily in 1976a) and McRobert and Hoffman (1997) provided the theory into how to create the trajectory, neither study empirically produced a trajectory, instead relying upon anecdotal evidence to illustrate their three failing trajectories. This study has used a New Zealand case study, Air NZ, to investigate the potential for using trajectory analysis as a failure classification model.

There are four major research questions examined in this thesis. The first question, which evolved from the second research objective, examined trajectory analysis against a range of criteria suggested by Zaltman, Pinson and Angelmar (1973) to evaluate business theories. AMH's trajectory analysis theory did not meet three (these being internal consistency, empirical interpretability and linguistic exactness) of Zaltman *et al.'s* (1973) criteria. AMH had developed the theory enough to allow similar anecdotal evidence to illustrate the three trajectories (see Argenti, 1976a; Buttery and Shadur, 1991; McRobert and Hoffman, 1997). However, without further development, trajectory analysis is not empirically testable using actual company data.

Therefore, chapter 5 attempted to develop the theory to meet all the sixteen criteria (and answer research question 3). With no guidance provided by AMH, it was felt that at such an early stage in the development of the theory, simplicity was the key. Consequently, indicators that are easily calculated were chosen to measure the trajectory. The trajectory itself was calculated by a straightforward merging of the indicators. The development made in chapter 5 meant that trajectory analysis met all sixteen criteria. However, the methodology chosen has several limitations, which include not using non-financial indicators and subjectively choosing the indicators that measure the trajectory. The development in chapter 5 did however enable trajectory analysis to be empirically tested; this was covered in chapter 8.

The final two questions relate to the results seen after creating Air NZ's trajectory and follow from the third research objective. The first question was concerned with what failure trajectory Air NZ exhibited during the period 1989 – 2001. The general conclusion provided in chapter 8, was that Air NZ exhibited a modified Type 2 trajectory. From 1989 – 1996, Air NZ followed the non-failing trajectory, before it transferred to the Type 2 trajectory from 1996, after the company invested in Ansett Holdings Limited.

However, there is one major problem with this conclusion: Air NZ did not fail. Consequently, Air NZ's trajectory is not complete; the company could continue to decline or begin to succeed again. There are two other possible conclusions with respect to the failing trajectory Air NZ exhibited. Air NZ could be at the final stage of the Type 3 trajectory, after declining to the plateau in June 2000 and collapsing from the plateau from June 2001. Alternatively, Air NZ could have begun the decline to the plateau in June 2001, which it reached in December 2001 (note that the original decline to the plateau is very similar to the modified Type 2 trajectory). Only in hindsight is it ultimately possible to determine which failure trajectory Air NZ exhibited. The longer between the collapse in 2001 and the actual date of failure, the more likely Air NZ exhibited the Type 3 trajectory. Then again, if Air NZ does not fail, we can say Air NZ was on the Type 3 trajectory, but transferred to the non-failing trajectory after reaching the plateau.

The final research question relates to whether trajectory analysis can be used as a failure classification model. After creating Air NZ's trajectory in chapter 8, it does not seem that trajectory analysis is a failure classification model. Apart from the decline in June 2000, there was nothing to suggest in 2000 that Air NZ was going to collapse in 2001. Using publicly available information, trajectory analysis only shows failure once the company has failed. Possibly, trajectory analysis could forecast failure if either internal management information or budgeted information is used instead, but the problem remains in determining at what point along the trajectory line, company failure becomes certain. Remember that Air NZ's trajectory declined to a value of -212, which was not enough to suggest failure. Therefore, based upon the case of Air NZ, AMH's assertions concerning trajectory analysis were incorrect: it does not predict failure.

The conclusion from the previous paragraph may reflect a 'grey area' in trajectory analysis. For example, in Altman's (1965; 1968) original model, he found that the model had a grey area, where it did not correctly classify companies as either failed or non-failed. It may be the same for trajectory analysis, whereby at a certain point in the trajectory, company failure becomes inevitable. Air NZ's trajectory may not be at this point, which may explain the difficulty in determining the type of trajectory that Air NZ exhibits. A valuable area of further research would be to determine whether a grey area exists in trajectory analysis or if the above conclusion is correct: that trajectory analysis has no real predictive value.

In spite of this, trajectory analysis, in the case of Air NZ, does seem to be an early indicator of company failure. The comment made in chapter 8 was that the trajectory faithfully represents Air NZ's performance over time. Thus, when Air NZ's financial performance increased, so did the trajectory and vice versa. Therefore, the trajectory could be an early warning system of failure. For example, when Air NZ's trajectory declined in June 2000, this suggested that there was something wrong with the company's operations. Additionally, the lack of growth in the trajectory from December 1996 to December 1999 again suggests that Air NZ was not performing at the same level seen prior to the investment in Ansett. The use of trajectory analysis should allow us to determine when a company's performance changes and the direction of the change should provide the user with additional information concerning possible failure. Certainly, an area of possible further research would be whether trajectory analysis is, generally, a reliable early warning system of company failure.

References

Abouzeedan, A. (2002) *A strategic approach for the usage of small and medium-size enterprises performance models.* Paper presented at the 2002 Nordic-Baltic conference in regional science, Ystad, Sweden.

Abouzeedan, A. and M. Busler (2002) *Small and medium-enterprises performance: survival index value (SIV) model.* Paper presented at the 2002 University of Durham medium enterprise development conference, Durham, England.

Aimer, P. (2000) *Wings of the nation.* Bush Press Communications Ltd, Takapuna, North Shore City.

Air New Zealand Limited, Annual Reports.

Air New Zealand Limited, Company Announcements.

Air New Zealand Limited (1982) *The path to recovery.* Air New Zealand Limited, Auckland.

Air New Zealand Limited (2001) *Air New Zealand Company History.* February 2001: Online. Available: http://www.airnz.co.nz/aboutus/corporateprofile/companyhistory/default.htm 10 June 2002.

Air New Zealand Limited (2001) *Air New Zealand Financial History.* February 2001: Online. Available: http://www.airnz.co.nz/aboutus/corporateprofile/financialhistory/default.htm 10 June 2002.

Altman, E.I. (1965) *The predicting of corporate bankruptcy: a discriminant analysis.* Garland Publishing, Inc., New York.

Altman, E.I. (1968) Financial ratios, discriminant analysis and the prediction of corporate bankruptcy, *The Journal Of finance* 23(4): 389 – 409.

Argenti, J. (1976a) *Corporate collapse: the causes and symptoms.* McGraw-Hill Book Company (UK) Limited, London.

Argenti, J. (1976b) How can you tell if they are going bust? *Accountancy* 87(998): 42 – 44.

Argenti, J. (1976c) Corporate planning and corporate collapse, *Long Range Planning* 9(6): 12 – 17.

Argenti, J. (1977) Company failure – long-range prediction not enough, *Accountancy* 88(1008): 46 – 52.

Argenti, J. (1979a) The reasons for company failure, *New Zealand Commerce* 35(3): 2 – 4.

Argenti, J. (1979b) The reasons for company failure – part 2, the signposts, *New Zealand Commerce* 35(4):

Argenti, J. (1980) The reasons for company failure – part 3, what can banks do? *New Zealand Commerce* 35(5): 11, 14.

Argenti, J. (1983) Predicting corporate failure, *Accountant's Digest no. 138.*

Argenti, J. (1984) *Predicting corporate failure.* The Institute of Chartered Accountants in England and Wales, London.

Argenti, J. (1986a) Predicting corporate failure, *Accountancy* 97(1112): 157 – 158.

Argenti, J. (1986b) Spot danger signs before it's too late, *Accountancy* 98(1115): 101 – 102.

Bibeault, D.B. (1982) *Corporate turnaround: how managers turn losers into winners.* McGraw-Hill Book Company, New York.

Beaver, W.H. (1966) Financial ratios as predictors of failure, *Empirical Research in Accounting: Selected Studies*, 71 – 111.

Bell, S. (1995) Ash cloud disrupts flights, *The Dominion 30 September 1995*, Edition 2, 1.

Bunge, M. (1967a) *Scientific research I: the search for system.* Springer-Verlag, Berlin.

Bunge, M. (1967b) *Scientific research II: the search for truth.* Springer-Verlag, Berlin.

Buttery, E.L. and M.A. Shadur Understanding corporate collapse, *Management Decision* 29(5): 38 – 45.

Cressy, R. and D. Storey (1995) *New firms and their banks.* Warwick University Business School, Coventry (Independent Study).

The Daily News (1996) Strike affects travel plans of thousands, says Air NZ, *The Daily News 9 September 1996*, Edition 1, 3.

Damodaran, A. (1997) *Corporate finance: theory and practice.* John Wiley & Sons, Inc., New York.

DATEX Services (2002), DATEX *New Zealand price histories (computer file).* DATEX Services, Lower Hutt, New Zealand.

Dictionary.com, available at www.dictionary.reference.com.

Dizdarevic, S., P. Larrañaga, B. Sierra, J.A. Lozano and J.M. Peña (1997) *Combining statistical and machine learning based classifiers in the prediction of*

corporate failure. January 1998, Online. Available: www.sc.ehu.es/ccwbayes/jmp/ART1197.DOC 1 November 2001.

Dunbar, A. (1996) Airlines 'run off feet' to help stranded passengers, *The Christchurch Press 11 September 1996*, Edition 2, 3.

Easdown, G. and P. Wilms (2002) *Ansett: the collapse*. Thomas C. Lothian Pty Ltd, Melbourne.

Elliott, B. and J. Elliott (2001) *Financial accounting and reporting, 5th edition*. Pearson Education Limited, Harlow, England.

Espiner, C. (2001a) Fluffy's crash-landing – the rise and fall of a domestic airline, *The Christchurch Press 23 April 2001*, Edition 1, 5.

Espiner, C. (2001b) How to lose $1B and anger people, *The Christchurch Press 17 September 2001*, 7.

Espiner, C. (2001c) A dingo stole our airline, *The Christchurch Press 6 October 2001*, Edition 2, 2 – 5.

The Evening Post (1995) Air strike grounds 10,000 per day, *The Evening Post 13 December 1995*, Edition 3, 3.

Hall, G. and B. Young (1991) Factors associated with insolvency amongst small firms, *International Small Business Journal* 9(2), 54 – 63.

Hambrick, D.C. and R.A. D'Aveni (1988) Large corporate failures as downward spirals, *Administrative Science Quarterly* 33(1): 11 – 23.

Institute of Chartered Accountants of New Zealand (2001) *Financial reporting standard No. 3: accounting for property, plant and equipment*. Institute of Chartered Accountants of New Zealand, Wellington.

Jain, B.A. and B.N. Nag (1997) Performance evaluation of neural network decision, *Journal of Management Information Systems* 14(2): 201 – 216.

Keasey, K. and R. Watson (1987) Non-financial symptoms and the prediction of small company failure: a test of Argenti's hypothesis, *Journal of Business Finance and Accounting* 14(3): 335 – 354.

Keasey K. and R. Watson (1991a) Financial distress prediction models: a review of their usefulness, *British Journal of Management* 2(2), 89 – 102.

Keasey, K. and R. Watson (1991b) The state of the art of small firm failure prediction: achievements and prognosis, *International Small Business Journal* 9(4): 11 – 29.

Kennedy, G. (2001) Air NZ and Qantas hunker down for domestic scrum, *National Business Review 20 July 2001*, 45 – 46.

Laitinen, E.K. (1991) Financial ratios and different failure processes, *Journal of Business Finance and Accounting* 18(5): 649 – 673.

Leitch, M.D. (1997) *The development of revaluations in New Zealand financial reporting.* University of Canterbury, Christchurch (Thesis: Masters, Accountancy, Finance and Information Systems).

Liu, J. and N. Wilson (2000) *Corporate failure rates and the impact of the 1986 Insolvency Act: an econometric analysis.* University of Leeds, Leeds (Unpublished Paper).

McGregor, W. (1993) Accounting for leases – a new framework, *Australian Accountant* 63(4): 17 - 21.

McGregor, W. (1996) *Accounting for leases: a new approach.* G4+1 document jointly produced by AASB, CASB, IASC, NZASRB, NZFRSB, UKASB, USFASB.

M[c]Kenzie, W. (1998) *Financial Times guide to using and interpreting company accounts: second edition.* Financial Times Pitman Publishing, London.

McRobert, A. and R. Hoffman (1997) *Corporate collapse: an early warning system for lenders, investors and suppliers.* The McGraw-Hill Companies, Inc., Sydney.

Mearns A. (1991) A test for Argenti's failure model, *Management Accounting* 69(6): 40 – 42.

Mellahi, K., P. Jackson and L. Sparks (2002) An exploratory study into failure in successful organizations: the case of Marks and Spencer, *British Journal of Management* 13(1): 15 – 29.

Morris, R. (1997) *Early warning indicators of corporate failure: a critical review of previous research and further empirical evidence.* Ashgate Publishing Limited, Aldershot, England.

Nailor, H. and A. Lennard (2000) *Leases: implementation of a new approach.* G4+1 document jointly produced by AASB, CASB, IASC, NZFRSB, UKASB, USFASB.

National Business Review, October 1989 – December 1989. Fourth Estate Newspapers, Wellington.

National Business Review (2001) Appointment – seven new company-wide divisions will lead a new management structure for the combined Air New Zealand and Ansett Australia, *National Business Review 23 February 2001*, 33 – 34.

New Zealand Press Association (2000) Few Ansett top brass make combined airline management group, *New Zealand Press Association 10 August 2000.*

New Zealand Press Association (2001) Air NZ rejects PM's claims over the truth about Ansett, *New Zealand Press Association 13 September 2001.*

New Zealand Society of Accountants (1980) *Statement of standard accounting practice No. 12: accounting for inter-period allocation of income tax.* Institute of Chartered Accountants of New Zealand, Wellington.

New Zealand Society of Accountants (1984) *Statement of standard accounting practice No. 3: accounting for depreciation.* Institute of Chartered Accountants of New Zealand, Wellington.

New Zealand Society of Accountants (1985) *Statement of standard accounting practice No. 6: materiality in financial statements.* Institute of Chartered Accountants of New Zealand, Wellington.

New Zealand Society of Accountants (1990) *Statement of standard accounting practice No. 8: accounting for business combinations.* Institute of Chartered Accountants of New Zealand, Wellington.

New Zealand Society of Accountants (1990) *Statement of standard accounting practice No. 18: accounting for leases and hire purchase contracts.* Institute of Chartered Accountants of New Zealand, Wellington.

New Zealand Society of Accountants (1991) *Statement of standard accounting practice No. 12: accounting for income tax.* Institute of Chartered Accountants of New Zealand, Wellington.

New Zealand Society of Accountants (1991) *Statement of standard accounting practice No. 28: accounting for fixed assets.* Institute of Chartered Accountants of New Zealand, Wellington.

New Zealand Society of Accountants (1993) Financial reporting *standard No. 31: disclosure of information about financial instruments.* Institute of Chartered Accountants of New Zealand, Wellington.

New Zealand Society of Accountants (1993) *Statement of concepts for general purpose financial reporting.* Institute of Chartered Accountants of New Zealand, Wellington.

New Zealand Society of Accountants (1995) *Explanatory forward to general purpose financial reporting.* Institute of Chartered Accountants of New Zealand, Wellington.

O'Hear, A. (1989) *Introduction to the philosophy of science.* Clarendon Press, Oxford.

Patterson, D. and J. Wallace (1997) *The Patterson Files.* New Zealand Wings, Otaki.

Perrin, M.C. (2000) *Case histories into the causes of financial distress in four New Zealand financial institutions.* University of Canterbury, Christchurch (Thesis: Masters, Accountancy, Finance and Information Systems).

Perry, S.C. (2001) The relationship between written business plans and the failure of small businesses in the U.S., *Journal of Small Business Management* 39(3): 201 – 208.

Quantum Finance Enterprise (2000) *The analysis of organizational performance utilizing multivariate analysis – a literature review.* January 2001: Online. Available: www.qfe2000.com/des.doc 3 November 2002.

Rendel, D. (1975) *Civil aviation in New Zealand: an illustrated history.* A.H & A.W Reed Ltd, Wellington.

Rennie, N. (1990) *Conquering isolation: the first 50 years of Air New Zealand.* Heinemann Reed, Auckland.

Reserve Bank of New Zealand, available at www.rbnz.co.nz.

Riordan, D. (2001) Air NZ's woes set alarms rings, *The New Zealand Herald 7 September 2001*, 5.

Robb, A.J. (1986a) Identifying corporate distress, *CMA Bulletin No 31*, October.

Robb, A.J. (1986b) *Mosgiel limited – cash flows and life events*. Working Paper 3/86, University of Canterbury, Christchurch.

Robb, A.J. (1999) OCFAID – a new tool for evaluating performance in co-operatives, *The World of Co-operative Enterprise*, 153-162

Robb, A.J. and K.T. Lewis (2002) OCFAID – a new tool for business historians, *Australian Economic History Review* 42(1): 77 – 90.

Roberts, A. (2002) *The very idea of fair value in FRS-3 accounting for property, plant and equipment*. Workings Papers in Accounting – No. 2, University of Canterbury, Christchurch.

Robertson, J. (1983) Company failure: measuring changes in financial health through ratio analysis, *Management Accounting* 61(11): 24 - 28.

Robertson, J. (1984) Laker Airways: could the collapse have been foreseen? *Management Accounting* 62(6): 28 – 31.

Robertson, J. and R. Mills (1991) A test for Argenti's failure model: a reply, *Management Accounting* 69(8): 40 – 42.

Robertson, J. and R. Mills (1991A) The uses and abuses of corporate prediction models, *Management Accounting* 69(9): 20 – 22.

Samson, A. (1996) Airports close as ash cloud sweeps north, *The Dominion 19 June 1996*, Edition 2, 1.

Saunders, J. (1996) Airport closures cause havoc, *The Evening Standard 19 June 1996*, Edition 2, 1.

Sharma, S. and V. Mahajan (1980) Early warning indicators of business failure, *Journal of Marketing* 44(4): 80 – 89.

Sheppard, J.P. (1994) Strategy and bankruptcy: an exploration of organizational death, *Journal of Management* 20(4), 795 – 833.

Slatter, S. (1984) *Corporate recovery: successful turnaround strategies and their implementation*. Penguin Books Limited, Harmoundsworth, England.

Smith, T. (1996) *Accounting for growth: stripping the camouflage from company accounts*. Random House, London.

Stevenson, K. (1992) SAC 4: a living experiment for business, *Financial Forum* 1(2): 4 – 5.

Storey, D., K. Keasey, R. Watson and P. Wynarzyk (1987) *The performance of small firms*. Croom Helm Limited, Beckenham, Kent.

Sunday Star Times (1996) 10,000 hit by air stopwork, *Sunday Star Times 8 September 1996*, Edition A, 3.

Taffler, R. J. (1982) Forecasting organization financial distress in the United Kingdom using discriminant analysis and financial ratio data, *Journal of the Royal Statistical Society* 145(3): 342 – 358.

Terrapinn, (2002) *Essential finance and accounting for non-financial managers*. August 2002: Online. Available: www.terrapinn.co.za/training/cmd/E1210/event.html 1 November 2002.

Thomson, I.A. (1968) *A History of TEAL. The origins of Air New Zealand as an international airline. 1940* – 1967. University of Canterbury, Christchurch (Thesis: History).

Tobin, S.M. (1996) *An examination of employees' observations and formal information in a distress organisation: the case of Fortex Group Ltd.*

University of Canterbury, Christchurch (Thesis: Masters, Accountancy, Finance and Information Systems).

Van Caillie, D. (1999) *Business failure prediction models: what is the theory looking for*. Paper presented at the 2nd International Conference on Risk and Crisis Management, Liège, Belgium.

Van Caillie, D. and S. Arnould (2001) *The follow-up of financial value creation indicators to prevent bankruptcies in Belgian SMEs: an empirical multivariate approach*. Paper presented at the 2001 Babson College Research Conference on Entrepreneurship, Jonkőping, Sweden.

Van den Bergh, R. (2001) Price of failure, *The Dominion 15 September 2001*, 3.

van Witteloostuijn, A. (1998) Bridging behavioral and economic theories of decline: organizational inertia, strategic competition, and chronic failure, *Management Science* 44(4): 501 – 519.

The Waikato Times (1996) City airport struggles as ash, fog foil flight plans, *The Waikato Times 8 July 1996*, Edition 2, 1.

Whetten, D.A. (1980) Sources, responses and effects of organizational decline. In eds. K.S. Cameron, R.I. Sutton, and D.A. Whetten (1988) *Readings in organizational decline*. Ballinger Publishing Company, Cambridge, Massachusetts. p. 342 – 374.

Whetten, D.A. (1987) Organizational growth and decline processes, *Annual Review of Sociology* 13(): 335 – 358.

Wong, F.S., P.Z. Wang, T. Goh and B. Quek (1992) Fuzzy neural systems for stock selection, *Financial Analysts Journal* 48(1): 47 – 52.

Zaltman, G., C.R.A. Pinson, R. Angelmar (1973) *Metatheory and consumer research*. Holt, Rinehart and Winston, Inc., New York.

Appendix 1: Air New Zealand Information: 1989 – 2001

Air New Zealand's Top Five Shareholders: 1989 – 2001

Year	Largest Shareholder	2nd Largest Shareholder	3rd Largest Shareholder	4th Largest Shareholder	5th Largest Shareholder
3/1989	Brierley Investment (65%)	Qantas Airways (19.9%)	Japan Airlines (7.5%)	American Airlines (7.5%)	
3/1990	Brierley (35%)	Qantas (19.9%)	Japan Airlines (7.5%)	American Airlines (7.5%)	National Provident Fund (4.0%)
6/1991	Brierley (37.5%)	Qantas (20.0%)	NPF (Equities) Ltd (5.5%)	Japan Airlines (5.0%)	American Airlines (5.0%)
6/1992	Brierley (42.5%)	Qantas (20.0%)	Japan Airlines (5.0%)	ANZ Nominees (3.7%)	Australian Mutual Provident Society (3.7%)
6/1993	Brierley (35.4%)	Qantas (19.3%)	ANZ Nominees (5.7%)	AMPS (5.4%)	Japan Airlines (5.0%)
6/1994	Brierley (37.5%)	Qantas (19.4%)	National Nominees (6.5%)	Japan Airlines (5.0%)	ANZ Nominees (3.1%)
6/1995	Brierley (41.9%)	Qantas (19.4%)	National Nominees (6.3%)	ANZ Nominees (3.3%)	AMPS (2.4%)
6/1996	Brierley (41.9%)	NZCSD Ltd (22.9%)	Qantas (19.4%)	First NZ Capital Custodians (1.4%)	Air NZ Staff Share Purchase Scheme (0.9%)
6/1997	Anafi Investments (27.8%)	National Nominees NZ (14.1%)	ANZ Nominees (12.2%)	Urtica Investments (7.6%)	Portfolio Management (6.3%)
6/1998	Anafi Investments (27.82%)	NNNZ (15.20%)	ANZ Nominees (8.89%)	Urtica Investments (7.59%)	Portfolio Management (6.82%)
6/1999	Anafi Investments (33.10%)	NNNZ (13.80%)	Urtica Investments (7.58%)	Portfolio Management (6.75%)	ANZ Nominees (5.45%)
6/2000	Anafi Investments (30.32%)	Singapore Airlines (24.99%)	NNNZ (6.87%)	ANZ Nominees (4.51%)	AMP Life Ltd (1.66%)
6/2001	Anafi Investments (30.32%)	Singapore Airlines (24.99%)	NNNZ (9.32%)	ANZ Nominees (2.80%)	Westpac Banking Corp – State Street (1.83%)

NB: The top-five shareholders are as reported in Air NZ's annual reports.

1996: NZCSD stake is actually split amongst its members who have invested in Air NZ. They did not provide individual holdings.

1997: Substantial Security Holders were Brierley (32.8%) & Franklin Resources (10.6%)

1998: Substantial Security Holders were Brierley (42.23%) & Franklin Resources (10.59%); Brierley Investment split into Anafi, Urtica and Portfolio

1999: Substantial Security Holders were Brierley (47.08%) & Franklin Resources (5.82%)

2000: Substantial Security Holders were Brierley (30.32%) & Singapore Airlines (24.99%); Brierley Investment held in Anafi holdings

2001: Substantial Security Holders were Brierley (30.32%) & Singapore Airlines (24.99%);

Directors of Air New Zealand from April 1989

Name	Appointed	Retired	Nominator	Name	Appointed	Retired	Nominator
Hon P R Burden	25/51999	4/10/2001	Brierley	J McCrea	24/8/1992	7/7/2000	Managing Director
Sir R P Carter	23/7/1998		Independent	J L Menadue	17/4/1989	24/7/1989	Qantas
Dr C K Cheong	8/8/2000		Singapore Airlines	R J Norris	27/8/1998		Independent
E M Coutts	8/8/2000		Independent	J L Palmer	29/11/2001		NZ Govt
P D Collins	17/4/1989	27/10/1999	Brierley	G M Pemberton	22/3/1993	31/5/1995	Qantas
J S Curtis	31/5/1995	4/10/2001	Independent[1]	P L Reddy	17/4/1989	27/10/1999	Brierley
Sir S J Cushing	17/4/1989	4/10/2001	Brierley	Dr P J B Rose	12/12/2000	4/10/2001	Independent
W L Dix	8/12/1989	11/3/1993	Qantas	J A Strong	6/9/1993	31/5/1995	Qantas
J A Farmer	26/6/1989		Independent	T K Tamaki	17/4/1989; 21/6/1991	1/4/1990; 22/12/1994	Japan Airlines
G R W France	4/10/2001		NZ Govt	J N Tan	8/8/2000	4/10/2001	Singapore Airlines
C B Goode	8/8/2000	20/9/2001	Singapore Airlines	G J Terry	20/12/1999	4/10/2001	Brierley
J Hartley	1/11/1998	31/3/1999	Brierley	Sir R Trotter	12/5/1989	30/6/1998	Independent; Brierley
W G Kaldahl	1/4/1990	4/9/1990	American Airlines	J F Ward	24/7/1989	9/8/1993	Qantas
J A Landels	31/5/1995	1/11/1998	Independent[1]	S P Wareing	30/8/1995	1/11/2000	Independent[1]
J Leslie	17/4/1989	14/11/1989	Qantas	W M Wilson	20/12/1999		Brierley
R H Matthew	1/1/1989	30/6/1998	Brierley				

[1] Although these directors were independents, their nominator was Qantas Airways.

Alternative Directors of Air New Zealand from April 1989

Name	Appointed	Retired	Nominator	Name	Appointed	Retired	Nominator
A Amarsi	5/7/2000	4/10/2001	Brierley	N Mirka	21/6/1991	14/10/1991	Japan Airlines
D F Amer	21/6/1991	15/12/1992	Qantas	L A Olsen	17/4/1989	21/6/1991	Qantas
C S Chew	8/8/2000		Singapore Airlines	C W Syn	26/7/2001	4/10/2001	Singapore Airlines
C E Huang	8/8/2000	18/7/2001	Singapore Airlines	T K Tamaki	1/4/1990	21/6/1991	Japan Airlines
G W Jones	22/3/1992	30/11/1993	Qantas	G K Toomey	20/12/1993	31/5/1995	Qantas
W G Kaldahl	17/4/1989	1/4/1990	American Airlines	G H Wong	17/4/1989	30/6/1998	Brierley
Lt-Gen B S Khiang	18/2/2001	20/9/2001	Singapore Airlines				

Air New Zealand's Executive Management: 1989 – 2001

Name	Position	Employed by Air NZ	Appointed to Position	Resigned[1]	Name	Position	Employed by Air NZ	Appointed to Position	Resigned[1]
D Beatson	VP Group Public Affairs	2001	2/2001		T Jenson	GGM, Operations Technical; SVP Operations	6/2000 (Ansett 1996)	14/8/2000; 2/2001	10/2001
G Biggs	GM Information Services; CIO	1992	1994; 1997	1998	G Kingshott	GM Ansett International	6/2000 (Ansett 1990)	14/8/2000	2001
R E Birch	GM Airline Operations	1958	1986	1992	G R Lilly	GM Australia & NZ; GM Regional Sales and Marketing; GM Air NZ International	1971	1992; 1997; 14/8/2000	2001
P D Bowe	GM Cargo; GM National Airline	1959	2/1989; 1992	1997	G A List	GM Finance	3/1988	3/1988	1991
P Brown	GM Human Resources	1993	1993	1996	N A Macfarlane	DCEO Development & Industry Affairs	1982	2/1989	1991
P J Clark	GM Mount Cook Group	1986 (MCG)	1991	1998	J McCrea	DCEO Airline; CEO International Airline; CEO; Managing Director	1956	2/1989; 1991; 8/1991; 1992	7/7/2000
S J Cushing	Executive Chairman		7/7/2000	3/1/2001	G C McDowall	GM Government & Industry Affairs; GM Govt & International Affairs; GM International Affairs	1960	(check '88); 1991; 1998	8/2000
A David	CIO	2001	2/2001		A J Marks	GM Passenger Sales/Marketing; GM Sales & Marketing, International; GM Commercial, International	7/1989	7/1989; 1991; 1/1997	1998
H E De Silva	Director of Human Resources; GM HR	1967	2/1989; 1991	1993	A Maroney	Chief Financial Officer	3/1/2001	2/2001	21/12/01
J Dell	Chief Financial Officer	1994	14/8/2000	2/2001	A Miller	GM Domestic Airline Group; GM Ansett Domestic; SVP Sales and Marketing; SVP Strategy	4/1997	4/1997; 14/8/2000; 2/2001; 10/2001	

						and Planning			
I J Diamond	GM Airline Services; GM Engineering; Group GM, Operations Services	1954	(check '98); 1991; 14/8/2000	2/2001	R Nazarian	Chief Financial Officer	10/1995	10/1995	1998
W Dodge	VP Freedom Air	2001	2001		A Patterson	GM Commercial; Executive GM Commercial	1/1999	1/1999; 14/8/2000	2001
P Donovan	VP NZ & Southwest Pacific Sales & Distribution; VP Australia Sales & Distribution	2001	2/2001; 10/2001		A Pondekas	SVP Ventures	6/2001	6/2001	10/2001
L F Doolan	GM Corporate Affairs; GGM Corporate, Govt & International Affairs	3/1991	3/1991; 14/8/2000	2/2001	T A Rainham	GM Catering; GM Ansett Express; GM Special Projects	1969	1991; 1998; 7/1999	8/2000
P Elmsly	GM Business Development; GM Cargo; VP Cargo	1972	2/1989; 8/1992; 2/2001		R Rosalky	GM Australian Regional Airlines	6/2000 (Ansett 1994)	14/8/2000	2/2001
R G Elstone	Chief Financial Officer	3/1991	3/1991	1995	T J Ryan	GM Information Services	1968	1991	1993
B J Fitzgerald	GM Terminal Services; Senior VP Worldwide Airport Services; SVP Customer Services	1993	1993; 2/2001; 10/2001		R J Scott	Chief Executive Officer	6/1988	6/1988	29/4/1991
M Flanagan	Director Strategic Planning; GM Strategic Planning; GGM AN/NZ Integration	1966	1996; 1999; 14/8/2000	2/2001	W R Tannock	GM Operations, International	1965	1992	8/2000
G R W France	Executive Director		10/2001		N Thompson	GM NZ Domestic Trans-Tasman & South West Pacific; VP Australian Sales & Distribution; SVP Sales & Distribution	1968	14/8/2000; 2/2001; 10/2001	
G Frazis	SVP Strategy, Networks & Marketing	1/2001	2/2001	10/2001	G K Toomey	President and CEO	3/1/2001	3/1/2001	9/10/2001
R G Gates	Director of Public Relations	1965	2/1989	1991	C Tremain	GM HR & OC; GGM HR & OC; SVP HR & OC	1990	1/1998; 14/8/2000; 2/2001	

L Grant	SVP Customer Services		2/2001	10/2001	K Turnbull	SVP Business Performance Enhancement	1/2001	2/2001	10/2001
J L Gribble	GM Portfolio Business; GM Group Portfolio Business	1958	1987; 14/8/2000	2/2001	K Waddell	VP Group Finance	2001	2/2001	12/2001
P Harris	VP Government/International Affairs	1/2001	2/2001	10/2001	R D Webster	GM Strategic Planning	1965	1992	1996
W Jacobson	GM ANNZES; SVP Operations & Technical	1/2000	1/2000; 10/2001						

NB: CEO = Chief Executive Officer
CIO = Chief Information Officer
DCEO = Deputy Chief Executive Officer
GM = General Manager
GGM = Group General Manager
HR = Human Resources
MCG = Mount Cook Group
OC = Organisational Change
SVP = Senior Vice President
VP = Vice President

[1] The resignation dates are when certain people no longer appeared in the executive management as disclosed in Air NZ's Annual Reports, Company Announcements or National Business Review (2001). Therefore, at the date, a particular manager may no longer work for Air NZ; alternatively, the manager may have been demoted out of the executive management.

Air New Zealand Share Price Information: October 1989 – December 2001

Date	31/10/1989	30/11/1989	31/12/1989	31/01/1990	28/02/1990	30/03/1990	30/04/1990	31/05/1990
Air NZ A-share price	$2.83	$2.47	$2.55	$2.35	$1.92	$1.78	$1.78	$1.88
Air NZ B-share price								
Market Value	$792,400,000	$691,600,000	$714,000,000	$658,000,000	$537,600,000	$498,400,000	$498,400,000	$526,400,000
Date	29/06/1990	31/07/1990	31/08/1990	28/09/1990	31/10/1990	30/11/1990	28/12/1990	31/01/1991
Air NZ A-share price	$1.98	$2.07	$1.70	$1.50	$1.30	$1.07	$1.03	$0.93
Air NZ B-share price								
Market Value	$554,400,000	$579,600,000	$476,000,000	$420,000,000	$364,000,000	$299,600,000	$288,400,000	$260,400,000
Date	28/02/1991	28/03/1991	30/04/1991	31/05/1991	28/06/1991	31/07/1991	30/08/1991	30/09/1991
Air NZ A-share price	$1.27	$1.48	$1.57	$1.53	$1.33	$1.43	$1.34	$1.60
Air NZ B-share price								
Market Value	$355,600,000	$414,400,000	$439,600,000	$428,400,000	$372,400,000	$400,400,000	$562,800,000	$672,000,000
Date	31/10/1991	29/11/1991	31/12/1991	31/01/1992	28/02/1992	31/03/1992	30/04/1992	29/05/1992
Air NZ A-share price	$1.66	$1.65	$1.58	$1.58	$1.76	$1.70	$1.82	$2.12
Air NZ B-share price				$1.65	$1.70	$1.70	$1.65	$2.20
Market Value	$697,200,000	$693,000,000	$663,600,000	$673,890,000	$730,380,000	$714,000,000	$739,410,000	$902,160,000
Date	30/06/1992	31/07/1992	31/08/1992	30/09/1992	30/10/1992	30/11/1992	31/12/1992	29/01/1993
Air NZ A-share price	$2.15	$2.54	$2.57	$2.60	$2.50	$2.48	$2.58	$2.43
Air NZ B-share price	$2.20	$2.76	$2.76	$2.76	$2.76	$2.62	$2.80	$2.60
Market Value	$910,350,000	$1,099,140,000	$1,107,330,000	$1,115,520,000	$1,088,220,000	$1,083,632,576	$1,138,478,353	$1,066,707,512
Date	26/02/1993	31/03/1993	30/04/1993	31/05/1993	30/06/1993	30/07/1993	31/08/1993	30/09/1993
Air NZ A-share price	$2.10	$1.90	$1.99	$2.23	$2.27	$2.44	$2.56	$2.68
Air NZ B-share price	$2.45	$2.02	$2.20	$2.70	$2.75	$2.75	$3.22	$3.55
Market Value	$952,302,650	$844,333,252	$897,158,427	$1,041,068,986	$1,059,981,703	$1,108,024,352	$1,213,457,315	$1,297,586,298
Date	29/10/1993	30/11/1993	31/12/1993	31/01/1994	28/02/1994	31/03/1994	30/04/1994	31/05/1994
Air NZ A-share price	$3.10	$3.02	$3.56	$4.10	$3.84	$3.72	$3.72	$3.88
Air NZ B-share price	$4.15	$4.20	$4.48	$5.20	$5.35	$4.70	$4.90	$4.90
Market Value	$1,507,582,673	$1,522,482,978	$1,721,607,609	$1,989,028,884	$1,937,362,916	$1,801,878,340	$1,832,922,269	$1,879,044,678

Date	30/06/1994	29/07/1994	31/08/1994	30/09/1994	31/10/1994	30/11/1994	30/12/1994	31/01/1995
Air NZ A-share price	$3.86	$3.83	$3.94	$3.55	$3.65	$3.49	$3.50	$3.45
Air NZ B-share price	$5.30	$5.47	$5.70	$5.00	$4.65	$4.85	$4.90	$4.60
Market Value	$1,935,367,235	$1,953,106,623	$2,020,516,297	$1,799,439,174	$1,773,938,804	$1,758,860,324	$1,769,503,957	$1,708,524,810
Date	28/02/1995	31/03/1995	28/04/1995	30/05/1995	30/06/1995	31/07/1995	31/08/1995	29/09/1995
Air NZ A-share price	$3.62	$3.63	$3.90	$3.82	$3.45	$3.63	$3.73	$3.78
Air NZ B-share price	$5.10	$5.20	$5.00	$4.95	$4.35	$5.00	$5.10	$5.15
Market Value	$1,835,139,692	$1,853,544,307	$1,900,331,943	$1,869,509,757	$1,669,719,899	$1,822,500,378	$1,866,848,848	$1,889,023,083
Date	31/10/1995	30/11/1995	29/12/1995	31/01/1996	29/02/1996	29/03/1996	30/04/1996	31/05/1996
Air NZ A-share price	$3.89	$3.90	$3.80	$3.48	$3.50	$3.57	$3.77	$3.27
Air NZ B-share price	$5.22	$5.35	$5.20	$4.70	$4.75	$4.85	$5.10	$4.45
Market Value	$1,931,597,615	$1,954,658,819	$1,902,549,367	$1,732,694,726	$1,746,221,010	$1,781,921,528	$1,878,379,451	$1,633,372,568
Date	28/06/1996	31/07/1996	30/08/1996	30/09/1996	31/10/1996	29/11/1996	31/12/1996	31/01/1997
Air NZ A-share price	$3.19	$3.05	$3.18	$3.01	$2.50	$2.68	$2.73	$2.68
Air NZ B-share price	$4.65	$4.05	$4.33	$4.00	$3.45	$3.70	$3.84	$3.78
Market Value	$1,641,355,383	$1,507,864,983	$1,588,801,853	$1,488,573,181	$1,256,184,578	$1,802,346,695	$1,855,683,642	$1,824,565,699
Date	28/02/1997	27/03/1997	30/04/1997	30/05/1997	30/06/1997	31/07/1997	29/08/1997	30/09/1997
Air NZ A-share price	$2.74	$2.59	$2.85	$2.95	$3.08	$3.14	$2.81	$2.80
Air NZ B-share price	$3.77	$3.92	$4.17	$4.29	$4.50	$4.69	$4.23	$4.02
Market Value	$1,839,132,751	$1,837,432,316	$1,982,025,889	$2,044,261,774	$2,140,166,252	$2,210,280,815	$1,987,127,191	$1,925,911,566
Date	31/10/1997	28/11/1997	31/12/1997	30/01/1998	27/02/1998	31/03/1998	30/04/1998	29/05/1998
Air NZ A-share price	$2.50	$2.30	$2.34	$2.14	$2.06	$1.87	$2.08	$1.95
Air NZ B-share price	$3.40	$3.30	$3.45	$2.72	$2.55	$2.50	$2.55	$2.48
Market Value	$1,666,992,147	$1,581,403,635	$1,634,627,219	$1,374,064,047	$1,303,722,760	$1,234,911,864	$1,309,504,236	$1,252,483,015
Date	30/06/1998	31/07/1998	31/08/1998	30/09/1998	30/10/1998	30/11/1998	31/12/1998	29/01/1999
Air NZ A-share price	$1.83	$1.84	$1.70	$1.42	$2.00	$2.12	$2.55	$2.69
Air NZ B-share price	$2.07	$2.04	$1.90	$1.58	$2.50	$2.45	$2.98	$3.10
Market Value	$1,103,921,764	$1,098,480,375	$1,019,126,787	$849,310,110	$1,272,491,456	$1,293,293,432	$1,564,796,063	$1,638,594,899

Date	26/02/1999	31/03/1999	30/04/1999	31/05/1999	30/06/1999	30/07/1999	31/08/1999	30/09/1999
Air NZ A-share price	$2.68	$2.85	$2.86	$3.10	$3.05	$3.00	$2.74	$2.63
Air NZ B-share price	$3.16	$3.25	$3.75	$3.90	$3.90	$3.78	$3.50	$3.10
Market Value	$1,652,368,415	$1,726,507,338	$1,868,349,257	$1,979,910,359	$1,965,538,870	$1,918,162,776	$1,765,149,850	$1,622,175,208
Date	29/10/1999	30/11/1999	30/12/1999	31/01/2000	29/02/2000	31/03/2000	28/04/2000	31/05/2000
Air NZ A-share price	$2.69	$2.52	$2.36	$2.08	$1.92	$1.92	$1.99	$1.84
Air NZ B-share price	$2.92	$2.85	$2.80	$2.35	$2.13	$2.33	$2.51	$2.19
Market Value	$1,590,250,968	$1,521,595,612	$1,461,587,606	$1,255,424,098	$1,147,944,412	$1,203,556,893	$1,273,866,982	$1,141,475,177
Date	30/06/2000	31/07/2000	31/08/2000	29/09/2000	31/10/2000	30/11/2000	29/12/2000	31/01/2001
Air NZ A-share price	$1.84	$1.80	$1.80	$1.88	$1.61	$1.43	$1.57	$1.60
Air NZ B-share price	$2.17	$2.38	$2.46	$2.84	$2.25	$1.90	$2.25	$2.10
Market Value	$1,135,963,972	$1,182,782,650	$1,205,028,622	$1,333,850,989	$1,091,834,666	$1,256,458,897	$1,440,381,926	$1,396,334,974
Date	28/02/2001	30/03/2001	30/04/2001	31/05/2001	29/06/2001	31/07/2001	31/08/2001	27/09/2001
Air NZ A-share price	$1.38	$1.03	$1.06	$1.05	$1.09	$1.10	$0.95	$0.40
Air NZ B-share price	$1.82	$1.40	$1.51	$1.44	$1.45	$1.34	$1.15	$0.40
Market Value	$1,207,583,784	$916,737,418	$969,109,426	$939,290,685	$958,438,267	$921,505,421	$793,148,557	$302,728,474
Date	31/10/2001	30/11/2001	31/12/2001					
Air NZ A-share price	$0.29	$0.32	$0.35					
Air NZ B-share price	$0.29	$0.33	$0.00					
Market Value	$219,478,144	$245,891,201	$264,887,415					

NB: The reported Share Prices were the closing prices for a particular day. The reported days were the last days the NZSE were open for a particular month.

Parent Company Financial Information

Financial Year Ending:	Mar 1989	Mar 1990	Jun 1991	Jun 1992	Jun 1993	Jun 1994	Jun 1995	Jun 1996	Jun 1997
Statement of Financial Performance	($000s)	($000s)	($000s)	($000s)	($000s)	($000s)	($000s)	($000s)	($000s)
Turnover	1,719,876	1,898,440	2,440,266	2,208,649	2,338,150	2,598,412	2,887,605	2,999,556	2,930,737
Operating Costs	1,524,006	1,690,986	2,225,462	1,908,968	2,023,995	2,215,281	2,436,913	2,596,440	2,599,706
Depreciation and Amortisation	95,280	89,172	137,016	107,414	119,716	133,674	138,463	145,499	144,396
Net Interest Charges	18,604	56,308	92,258	57,968	54,132	50,477	26,036	3,725	14,492
Operating Profit	81,986	61,974	-14,470	134,299	140,307	198,980	286,193	253,892	172,143
Abnormal Items	-3,455	28,707	64,345	-13,140	3,745	0	0	0	-25,422
Tax Paid	-13,800	9,224	8,141	0	0	-7,500	-25,462	-25,083	-3,102
Subsidiaries and Associates	1,227	1,049	-4,094	-6,053	-4,517	-815	-569	-3,582	6,577
Extraordinary Items	-551	0	-48,425	0	0	0	0	0	0
Consolidated Net Profit After Tax	72,317	100,954	5,497	115,106	139,535	190,665	260,162	225,227	150,196
Statement of Financial Position									
Issued Capital	280,000	280,000	280,000	420,000	434,775	443,485	443,485	443,490	725,274
Reserves	338,657	468,448	461,673	564,963	679,322	754,832	830,698	956,885	947,438
Minority Interests	12,315	12,712	70	85	75	3,442	4,599	2,492	2,532
Total Equity	630,972	761,160	741,743	985,048	1,114,172	1,201,759	1,278,782	1,402,867	1,675,244
Long-Term Liabilities	459,623	744074	833942	842825	938697	887085	1013434	774646	809639
Other Liabilities	83,154	90474	74401	5179	4382	3753	3167	1986	1158
Current Liabilities	507,783	593,539	708,658	576,310	671,774	768,853	811,826	955,331	860,746
Total Liabilities	1,050,560	1,428,087	1,617,001	1,424,314	1,614,853	1,659,691	1,828,427	1,731,963	1,671,543
Fixed Assets	1,278,022	1,615,888	1,726,012	1,575,404	1,761,453	1,752,932	1,820,435	1,737,678	1,813,889
Long-Term Assets	73,608	77,004	53,428	181,311	210,439	192,745	208,384	212,636	777,118
Current Assets	329,902	496,355	579,304	652,647	757,133	915,773	1,078,390	1,184,516	755,780
Total Assets	1,681,532	2,189,247	2,358,744	2,409,362	2,729,025	2,861,450	3,107,209	3,134,830	3,346,787
Cashflow Statement									
Net Cashflow from Operating Activities	178,628	231,958	45,965	298,132	258,150	425,016	412,937	425,845	291,590
Net Cashflow from Investing Activities	-77,746	-197,350	51,259	-18,395	-310,592	-285,455	-371,297	-142,072	-823,337
Net Cashflow from Financing Activities	-107,991	-27,651	-103,592	-150,376	130,150	-77,162	103,855	-177,338	113,592
Net Increase (Decrease) in Cash Holding	-7,109	6,957	-6,368	129,361	77,708	62,399	145,495	106,435	-418,155
Closing Cash Balance	246	7,013	127,330	256,691	334,399	396,798	542,293	648,728	230,573

Financial Year Ending:	Jun 1998	Jun 1999	Jun 2000	Jun 2001
Statement of Financial Performance	($000s)	($000s)	($000s)	($000s)
Turnover	3,088,801	3,359,012	3,723,687	7,960,125
Operating Costs	2,748,624	2,961,752	3,302,088	7,481,326
Depreciation and Amortisation	169,768	196,679	185,830	532,464
Net Interest Charges	40,702	50,248	72,170	226,568
Operating Profit	129,707	150,333	163,599	-280,233
Abnormal Items	0	0	0	-1,277,019
Tax Paid	-17,838	-37,428	-37,340	148,470
Subsidiaries and Associates	32,956	110,227	59,824	-16,536
Extraordinary Items	0	0	-786,227	0
Consolidated Net Profit After Tax	144,825	214,371	-600,144	-1,425,318
Statement of Financial Position				
Issued Capital	725,274	725,852	727,026	1,007,485
Reserves	1,264,075	1,398,108	861,275	-491,230
Minority Interests	-470	2,208	1,784	1,784
Total Equity	1,988,879	2,126,168	1,590,085	518,039
Long-Term Liabilities	1,208,642	1,310,691	3,799,452	3,956,833
Other Liabilities	0	0	0	0
Current Liabilities	906,510	953,839	3,599,882	3,639,157
Total Liabilities	2,115,152	2,264,530	7,399,334	7,595,990
Fixed Assets	2,213,709	2,223,242	6,027,055	4,997,659
Long-Term Assets	909,196	970,219	498,044	324,938
Current Assets	981,126	1,197,237	2,464,320	2,791,432
Total Assets	4,104,031	4,390,698	8,989,419	8,114,029
Cashflow Statement				
Net Cashflow from Operating Activities	160,033	331,583	391,821	146,315
Net Cashflow from Investing Activities	-164,849	-257,105	-670,552	-133,381
Net Cashflow from Financing Activities	-28,382	20,468	681,904	56,021
Net Increase (Decrease) in Cash Holding	-33,198	94,946	403,173	68,955
Closing Cash Balance	197,375	292,321	695,494	764,449

NB: In the 1991 Annual Report, Air NZ included short-term deposits as part of its cash balance. This accounts for the apparent disparity in the table. The Accounting Policy change is included as an extraordinary item in the period ending June 2000.

Period Ending	Mar-90	Sep-90	Jun-91	Dec-91	Jun-92	Dec-92	Jun-93	Dec-93	Jun-94
Statement of Financial Performance	($000s)	($000s)	($000s)	($000s)	($000s)	($000s)	($000s)	($000s)	($000s)
Turnover	1898440	940080	1500186	1089210	1119439	1163981	1174169	1267478	1330934
Operating Costs	1690986							1087394	1127887
Depreciation and Amortisation	89172							64948	68726
Net Interest Charges	56308							27317	23160
Operating Profit	61974	-7285	-7185	65565	68734	70124	70183	87819	111161
Abnormal Items	28707	18160	46185	-7296	-5844	-8173	11918	0	0
Tax Paid	9224	0	8141	0	0	0	0	0	-7500
Subsidiaries and Associates	1049	437	-4531	-2194	-3859	-1014	-3503	280	-1095
Extraordinary Items	0	-37967	-10458	0	0	0	0	0	0
Consolidated Net Profit After Tax	100954	-26655	32152	56075	59031	60937	78598	88099	102566
Statement of Financial Position									
Issued Capital	280000	280000	280000	420000	420000	428483	434775	443485	443485
Reserves	468448	407387	461673	531270	564963	651810	679322	729793	754832
Minority Interests	12712	12604	70	84	85	85	75	2155	3442
Total Equity	761160	699991	741743	951354	985048	651895	1114172	1175433	1201759
Long-Term Liabilities	744074	703476	833942	964913	842825	1017166	938697	987203	887085
Other Liabilities	90474	89821	74401	0	5179	0	4382	3858	3753
Current Liabilities	593539	548515	708658	712528	576310	715436	671774	765155	768853
Total Liabilities	1428087	1341812	1617001	1677441	1424314	1732602	1614853	1756216	1659691
Fixed Assets	1615888	1554765	1726012	1751918	1575404	2001820	1761453	1869816	1752932
Long-Term Assets	77004	75854	53428	52615	181311	32931	210439	182940	192745
Current Assets	496355	411184	579304	824262	652647	778209	757133	878893	915773
Total Assets	2189247	2041803	2358744	2628795	2409362	2812960	2729025	2931649	2861450
Cashflow Statement									
Net Cashflow from Operating Activities	231958	62352	-16387	190141	107991	126819	131331	215013	210003
Net Cashflow from Investing Activities	-197350	48485	2774	-14437	-3958	-254233	-56359	-209019	-76436
Net Cashflow from Financing Activities	-27651	-114713	11121	13654	-164030	181853	-51703	6030	-83192
Net Increase (Decrease) in Cash Holding	6957	-3876	-2492	189358	-59997	54439	23269	12024	50375
Closing Cash Balance	7013	3514	127330	316688	256691	311130	334399	346423	396798

Period Ending	Dec-94	Jun-95	Dec-95	Jun-96	Dec-96	Jun-97	Dec-97	Jun-98	Dec-98
Statement of Financial Performance	($000s)	($000s)	($000s)	($000s)	($000s)	($000s)	($000s)	($000s)	($000s)
Turnover	1472432	1415173	1500138	1499418	1462430	1468307	1534330	1554471	1628355
Operating Costs	1219281	1217632	1266118	1330322	1319418	1280288	1370969	1377655	1454094
Depreciation and Amortisation	69139	69324	72728	72771	71580	72816	86421	83347	87537
Net Interest Charges	16597	9439	6072	-2347	6815	7677	16304	24398	26055
Operating Profit	167415	118778	155220	98672	64617	107526	60636	69071	60669
Abnormal Items	0	0	0	0	0	-25422	0	0	0
Tax Paid	-27746	2284	-18875	-6208	-593	-2509	-10287	-7551	-17050
Subsidiaries and Associates	790	-1359	-1209	-2373	11527	-4950	31690	1266	39160
Extraordinary Items	0	0	0	0	0	0	0	0	0
Consolidated Net Profit After Tax	140980	119182	135136	90091	76737	73459	82039	62786	82779
Statement of Financial Position									
Issued Capital	443485	443485	443485	443490	566811	725274	725274	725274	725274
Reserves	797199	830698	952628	956885	1081925	947438	1122360	1264075	1307600
Minority Interests	3472	4599	2465	2492	2476	2532	3856	-470	-1388
Total Equity	1244156	1278782	1398578	1402867	1651212	1675244	1851490	1988879	2031486
Long-Term Liabilities	918286	1013434	872690	774646	730757	809639	1020746	1208642	1415441
Other Liabilities	3180	3167	2697	1986	1567	1158	0	0	0
Current Liabilities	865097	811826	996821	955331	946911	860746	982925	906510	1099318
Total Liabilities	1786563	1828427	1872208	1731963	1679235	1671543	2003671	2115152	2514759
Fixed Assets	1756795	1820435	1818059	1737678	1666574	1813889	2113720	2213709	2466183
Long-Term Assets	214600	208384	215585	212636	813296	777118	822397	909196	846940
Current Assets	1059324	1078390	1237142	1184516	850577	755780	919044	981126	1233122
Total Assets	3030719	3107209	3270786	3134830	3330447	3346787	3855161	4104031	4546245
Cashflow Statement									
Net Cashflow from Operating Activities	242280	170657	269935	155910	196808	94782	135628	24405	183162
Net Cashflow from Investing Activities	-214829	-156468	-87854	-54218	-665122	-158215	-146162	-18687	-311958
Net Cashflow from Financing Activities	58606	45249	-89369	-87969	58707	54885	-14765	-13617	268201
Net Increase (Decrease) in Cash Holding	86057	59438	92712	13723	-409607	-8548	-25299	-7899	139405
Closing Cash Balance	482855	542293	635005	648728	239121	230573	205274	197375	336780

Period Ending	Jun-99	Dec-99	Jun-00	Dec-00	Jun-01	Dec-01
Statement of Financial Performance	($000s)	($000s)	($000s)	($000s)	($000s)	($000s)
Turnover	1730657	1803921	1919766	4311489	3648636	2579354
Operating Costs	1507658	1556712	1745376	3981839	3499487	2595629
Depreciation and Amortisation	109142	88851	96979	246881	285583	158457
Net Interest Charges	24193	31411	40759	115659	110909	60293
Operating Profit	89664	126947	36652	-32890	-247343	-235025
Abnormal Items	0	0	0	0	-1277019	-183008
Tax Paid	-20378	-51601	14261	29472	118998	41520
Subsidiaries and Associates	71067	51878	7946	7199	-23735	0
Extraordinary Items	0	0	-786227	0	0	0
Consolidated Net Profit After Tax	131592	127234	-727378	3781	-1429099	-376513
Statement of Financial Position						
Issued Capital	725852	726982	727026	1007485	1007485	999733
Reserves	1398108	1507209	861275	893287	-491230	-874003
Minority Interests	2208	2219	1784	1784	1784	0
Total Equity	2126168	2236410	1590085	1902556	518039	125730
Long-Term Liabilities	1310691	1359261	3799452	3622149	3956833	1671716
Other Liabilities	0	0	0	0	0	0
Current Liabilities	953839	1034901	3599882	4017692	3639157	2285236
Total Liabilities	2264530	4630572	7399334	7639841	7595990	3956952
Fixed Assets	2223242	2451365	6027055	6074968	4997659	2495900
Long-Term Assets	970219	920793	498044	576542	324938	199924
Current Assets	1197237	1258414	2464320	2890887	2791432	1386858
Total Assets	4390698	4630572	8989419	9542397	8114029	4082682
Cashflow Statement						
Net Cashflow from Operating Activities	148421	157915	233906	189080	-42765	-187401
Net Cashflow from Investing Activities	54853	-119003	-551549	-210490	77109	-123607
Net Cashflow from Financing Activities	-247733	-58673	740577	27280	28741	17803
Net Increase (Decrease) in Cash Holding	-44459	-19761	422934	5870	63085	-293205
Closing Cash Balance	292321	272560	695494	701364	764449	471244

NB: See the notes for the previous table.

Effect of Air New Zealand's acquisition of Ansett

The following formed part of Air NZ's 2000 Annual Report, Note 13 (p. B23):

On 23 June 2000 the Group acquired the remaining 50% of the shares in Ansett Holdings Limited for a cash consideration of A$580,000,000 with an additional obligation to make a second payment by way of shares or cash equivalent to 10.5% of the value of Air New Zealand shares on issue on 18 February 2000.

Ansett Holdings Limited has been consolidated from 30 June 2000. Therefore 50% of the earnings have been equity accounted for the year and the financial position consolidated as at 30 June 2000.

	Consolidated 2000 $000
Summary of the effect of acquisition of Ansett Holdings Limited	
Assets – Increase/(Decrease)	
Fixed Assets	3,409,855
Investments	(575,165)
Other Term Assets	118,437
Bank balances	203,077
Finance Lease Receivable	62,357
Other Current Assets	860,416
Liabilities – (Increase)/Decrease	
Loans and Capitalised Leases Obligations	(1,456,470)
Employee Entitlements	(309,398)
Trade and Other Creditors	(1,435,317)
Minority Interest	(1,784)
Purchase Price	876,008
Deferred Consideration	(116,541)
Net Cash outflow to the company	759,467
Cash acquired with subsidiary	(203,077)
Net Cash outflow to the Group	556,390

No subsidiaries were acquired during the year ended 30 June 1999

Appendix 2: Breakdown of changes made to create the worst-case scenario

	31/03/1989	31/03/1990	30/09/1990	30/06/1991	31/12/1991
Current Assets	$47,700,000	$53,374,000	$53,374,000	$133,541,000	$133,541,000
Fixed Assets	$202,762,000	$323,017,000	$323,017,000	$495,161,000	$495,161,000
Increases In Assets	$250,462,000	$376,391,000	$376,391,000	$628,702,000	$628,702,000
Current Liabilities	$47,700,000	$53,374,000	$53,374,000	$133,541,000	$133,541,000
LT Liabilities	$123,000,000	$300,863,000	$300,863,000	$589,534,000	$589,534,000
Increases in Liabilities	$170,700,000	$354,237,000	$354,237,000	$723,075,000	$723,075,000
Net Assets	$79,762,000	$22,154,000	$22,154,000	-$94,373,000	-$94,373,000
Increases in ARR[1]	$202,762,000	$188,154,000	$188,154,000	$151,427,000	$151,427,000
Decreases in Profit	$123,000,000	$184,540,000	$166,000,000	$245,800,000	$245,800,000
Increase in REs[2]	$0	$18,540,000	$0	$0	$0
Net Increase in Equity	$79,762,000	$22,154,000	$22,154,000	-$94,373,000	-$94,373,000

Table One: Change in Figures from 31/3/1989 – 31/12/1991

	30/06/1992	31/12/1992	30/06/1993	31/12/1993	30/06/1994
Current Assets	$147,721,000	$147,721,000	$135,535,000	$135,535,000	$133,043,000
Fixed Assets	$671,322,000	$671,322,000	$410,888,000	$410,888,000	$320,795,000
Increases In Assets	$819,043,000	$819,043,000	$546,423,000	$546,423,000	$453,838,000
Current Liabilities	$147,721,000	$147,721,000	$135,535,000	$135,535,000	$133,043,000
LT Liabilities	$659,203,000	$659,203,000	$568,757,000	$568,757,000	$566,741,000
Increases in Liabilities	$806,924,000	$806,924,000	$704,292,000	$704,292,000	$699,784,000
Net Assets	$12,119,000	$12,119,000	-$157,869,000	-$157,869,000	-$245,946,000
Increases in ARR[1]	$208,267,000	$208,267,000	$64,851,000	$64,851,000	$27,052,000
Decreases in Profit	$196,148,000	$196,148,000	$222,720,000	$222,720,000	$272,998,000
Increase in REs[2]	$0	$0	$0	$0	$0
Net Increase in Equity	$12,119,000	$12,119,000	-$157,869,000	-$157,869,000	-$245,946,000

Table Two: Change in Figures from 30/6/1992 – 30/6/1994

	31/12/1994	30/06/1995	31/12/1995	30/06/1996	31/12/1996
Current Assets	$133,043,000	$170,411,000	$169,569,000	$178,394,000	$155,737,000
Fixed Assets	$320,795,000	$336,801,000	$351,463,000	$361,267,000	$364,289,000
Increases In Assets	$453,838,000	$507,212,000	$521,032,000	$539,661,000	$520,026,000
Current Liabilities	$133,043,000	$170,411,000	$169,569,000	$178,394,000	$155,737,000
LT Liabilities	$566,741,000	$686,328,000	$700,990,000	$742,971,000	$745,993,000
Increases in Liabilities	$699,784,000	$856,739,000	$870,559,000	$921,365,000	$901,730,000
Net Assets	-$245,946,000	-$349,527,000	-$349,527,000	-$381,704,000	-$381,704,000
Increases in ARR[1]	$27,052,000	-$7,035,000	-$7,035,000	$35,764,000	$35,764,000
Decreases in Profit	$272,998,000	$342,492,000	$342,492,000	$417,468,000	$417,468,000
Increase in REs[2]	$0	$0	$0	$0	$0
Net Increase in Equity	-$245,946,000	-$349,527,000	-$349,527,000	-$381,704,000	-$381,704,000

Table Three: Changes in Figures 31/12/1994 – 31/12/1996

	30/06/1997	31/12/1997	30/06/1998	31/12/1998	30/06/1999
Current Assets	$163,333,000	$210,178,000	$224,598,000	$223,889,000	$227,291,000
Fixed Assets	$400,331,000	$423,631,000	$475,635,000	$545,989,000	$603,664,000
Increases In Assets	$563,664,000	$633,809,000	$700,233,000	$769,878,000	$830,955,000
Current Liabilities	$163,333,000	$210,178,000	$224,598,000	$223,889,000	$227,291,000
LT Liabilities	$782,971,000	$806,271,000	$787,838,000	$858,192,000	$804,694,000
Increases in Liabilities	$946,304,000	$1,016,449,000	$1,012,436,000	$1,082,081,000	$1,031,985,000
Net Assets	-$382,640,000	-$382,640,000	-$312,203,000	-$312,203,000	-$201,030,000
Increases in ARR[1]	$54,055,000	$54,055,000	$108,711,000	$108,711,000	$248,048,000
Decreases in Profit	$436,695,000	$436,695,000	$420,914,000	$420,914,000	$449,078,000
Increase in REs[2]	$0	$0	$0	$0	$0
Net Increase in Equity	-$382,640,000	-$382,640,000	-$312,203,000	-$312,203,000	-$201,030,000

Table Four: Changes in Figures 30/6/1997 – 30/6/1999

	31/12/1999	30/06/2000	31/12/2000	30/06/2001	31/12/2001
Current Assets	$237,263,000	$395,459,000	$425,870,000	$539,649,000	$290,166,000
Fixed Assets	$750,303,000	$2,562,480,000	$2,811,539,000	$2,711,908,000	$908,465,000
Increases In Assets	$987,566,000	$2,957,939,000	$3,237,409,000	$3,251,557,000	$1,198,631,000
Current Liabilities	$237,263,000	$395,459,000	$425,870,000	$539,649,000	$290,166,000
LT Liabilities	$951,333,000	$2,010,674,000	$2,259,733,000	$2,425,509,000	$622,066,000
Increases in Liabilities	$1,188,596,000	$2,406,133,000	$2,685,603,000	$2,965,158,000	$912,232,000
Net Assets	-$201,030,000	$551,806,000	$551,806,000	$286,399,000	$286,399,000
Increases in ARR[1]	$248,048,000	$551,806,000	$551,806,000	$286,399,000	$286,399,000
Decreases in Profit	$449,078,000	$337,149,000	$0	$0	$0
Increase in REs[2]	$0	$337,149,000	$0	$0	$0
Net Increase in Equity	-$201,030,000	$551,806,000	$551,806,000	$286,399,000	$286,399,000

Table Four: Changes in Figures 31/12/1999 – 31/12/2001

[1] ARR stands for Asset Revaluation Reserve.

[2] REs stands for Retained Earnings.

Appendix 3: Workings to calculate the trajectory

Best-Case Scenario

Period Ending	31/03/1989	31/09/1989	31/03/1990	30/09/1990	30/06/1991	31/12/1991	30/06/1992
Operating Cash Flow	$178,628,000		$231,958,000	$62,352,000	-$16,387,000	$190,141,000	$107,991,000
Less Int. and Divs. Received	$5,552,000		$6,509,000	$0	$18,765,000	$0	$0
Less Interest Paid	$18,511,000		$52,842,000	$0	$107,278,000	$0	$0
Less Dividends Paid	$26,237,000		$32,290,000	$0	$18,493,000	$0	$16,800,000
Less Capitalised Interest	$0		$0	$0	$0	$0	$0
OCFAID	$139,432,000	$0	$153,335,000	$62,352,000	-$123,393,000	$190,141,000	$91,191,000
Cumulative OCFAID	$139,432,000	$139,432,000	$292,767,000	$355,119,000	$231,726,000	$421,867,000	$513,058,000
After-Tax Profits	$72,317,000		$100,954,000	-$26,655,000	$32,152,000	$56,075,000	$59,031,000
Less Dividends Proposed	$28,000,000		$32,200,000	$0	$0	$16,800,000	$25,200,000
Less Capitalised Interest	$0		$0	$0	$0	$0	$0
Retained Earnings	$44,317,000	$0	$68,754,000	-$26,655,000	$32,152,000	$39,275,000	$33,831,000
Cumulative Retained Earnings	$44,317,000	$44,317,000	$113,071,000	$86,416,000	$118,568,000	$157,843,000	$191,674,000
EBIT	$132,697,000		$118,282,000		$77,788,000		$192,267,000
Long-term Liabilities	$459,623,000		$744,074,000		$833,942,000		$842,845,000
Total Equity	$630,972,000		$761,160,000		$741,743,000		$985,048,000
Capital Employed	$1,090,595,000		$1,505,234,000		$1,575,685,000		$1,827,893,000
Return on Capital	0.1217	0.0393	0.0393	0.0247	0.0247	0.0526	0.0526
Total Liabilities	$1,050,560,000		$1,428,087,000	$1,341,812,000	$1,617,001,000	$1,677,441,000	$1,424,314,000
Total Equity	$630,972,000		$761,160,000	$699,991,000	$741,743,000	$951,354,000	$985,048,000
Debt/Equity Ratio	1.6650		1.8762	1.9169	2.1800	1.7632	1.4459
Period Ending			31/03/1990	30/09/1990	30/06/1991	31/12/1991	30/06/1992
Cumulative OCFAID			$292,767,000	$355,119,000	$231,726,000	$421,867,000	$513,058,000
Cumulative Retained Earnings			$113,071,000	$86,416,000	$118,568,000	$157,843,000	$191,674,000
Return on Capital			3.93%	2.47%	2.47%	5.26%	5.26%
Debt/Equity Ratio			1.8762	1.9169	2.1800	1.7632	1.4459
A' Shares			$1.78	$1.50	$1.33	$1.58	$2.15
B' Shares			$1.78	$1.50	$1.33	$1.58	$2.20
Market Value Equity			$498,400,000	$420,000,000	$372,400,000	$663,600,000	$910,350,000

Period Ending	31/12/1992	30/06/1993	31/12/1993	30/06/1994	31/12/1994	30/06/1995	31/12/1995
Operating Cash Flow	$126,819,000	$131,331,000	$215,013,000	$210,003,000	$242,280,000	$170,657,000	$269,935,000
Less Int. and Divs. Received	$0	$0	$0	$0	$0	$0	$0
Less Interest Paid	$0	$0	$0	$0	$0	$0	$0
Less Dividends Paid	$4,598,000	$5,195,000	$5,531,000	$26,610,000	$35,479,000	$35,478,000	$53,218,000
Less Capitalised Interest	$2,394,000	$2,647,000	$1,289,000	$1,911,000	$1,955,000	$788,000	$491,000
OCFAID	$119,827,000	$123,489,000	$208,193,000	$181,482,000	$204,846,000	$134,391,000	$216,226,000
Cumulative OCFAID	$632,885,000	$756,374,000	$964,567,000	$1,146,049,000	$1,350,895,000	$1,485,286,000	$1,701,512,000
After-Tax Profits	$60,937,000	$78,598,000	$88,099,000	$102,566,000	$140,459,000	$119,703,000	$135,136,000
Less Dividends Proposed	$17,139,000	$26,088,000	$26,609,000	$35,479,000	$35,479,000	$53,218,000	$35,479,000
Less Capitalised Interest	$2,410,000	$2,631,000	$1,289,000	$1,911,000	$1,955,000	$788,000	$491,000
Retained Earnings	$41,388,000	$49,879,000	$60,201,000	$65,176,000	$103,025,000	$65,697,000	$99,166,000
Cumulative Retained Earnings	$233,062,000	$282,941,000	$343,142,000	$408,318,000	$511,343,000	$577,040,000	$676,206,000
EBIT	$96,109,000	$98,330,000	$115,136,000	$134,321,000	$184,012,000	$128,217,000	$161,292,000
Long-term Liabilities	$1,017,166,000	$938,697,000	$987,203,000	$887,085,000	$918,286,000	$1,013,434,000	$872,690,000
Total Equity	$1,080,378,000	$1,114,172,000	$1,175,433,000	$1,201,759,000	$1,244,156,000	$1,278,782,000	$1,398,578,000
Capital Employed	$2,097,544,000	$2,052,869,000	$2,162,636,000	$2,088,844,000	$2,162,442	$2,292,216,000	$2,271,268,000
Return on Capital	0.0458	0.0479	0.0532	0.0643	0.0851	0.0559	0.0710
Total Liabilities	$1,732,582,000	$1,614,853,000	$1,756,216,000	$1,659,691,000	$1,786,653,000	$1,828,427,000	$1,872,208,000
Total Equity	$1,080,378,000	$1,114,172,000	$1,175,433,000	$1,201,759,000	$1,244,156,000	$1,278,782,000	$1,398,578,000
Debt/Equity Ratio	1.6037	1.4494	1.4941	1.3811	1.4360	1.4298	1.3387
Period Ending	31/12/1992	30/06/1993	31/12/1993	30/06/1994	31/12/1994	30/06/1995	31/12/1995
Cumulative OCFAID	$632,885,000	$756,374,000	$964,567,000	$1,146,049,000	$1,350,895,000	$1,485,286,000	$1,701,512,000
Cumulative Retained Earnings	$233,062,000	$282,941,000	$343,142,000	$408,318,000	$511,343,000	$577,040,000	$676,206,000
Return on Capital	4.58%	4.79%	5.32%	6.43%	8.51%	5.59%	7.10%
Debt/Equity Ratio	1.6037	1.4494	1.4941	1.3811	1.4360	1.4298	1.3387
A' Shares	$2.58	$2.27	$3.56	$3.86	$3.50	$3.45	$3.80
B' Shares	$2.80	$2.75	$4.48	$5.30	$4.90	$4.35	$5.20
Market Value Equity	$1,138,478,353	$1,059,981,703	$1,721,607,609	$1,935,367,235	$1,769,503,957	$1,669,719,899	$1,902,549,367

Period Ending	30/06/1996	31/12/1996	30/06/1997	31/12/1997	30/06/1998	31/12/1998	30/06/1999
Operating Cash Flow	$155,910,000	$196,808,000	$94,782,000	$135,628,000	$24,405,000	$183,162,000	$148,421,000
Less Int. and Divs. Received	$0	$0	$0	$0	$0	$0	$0
Less Interest Paid	$0	$0	$0	$0	$0	$0	$0
Less Dividends Paid	$35,479,000	$53,219,000	$45,345,000	$68,017,000	$45,345,000	$45,435,000	$33,919,000
Less Capitalised Interest	$848,000	$2,220,000	$4,119,000	$3,788,000	$3,014,000	$3,403,000	$2,086,000
OCFAID	$119,583,000	$141,369,000	$45,318,000	$63,823,000	-$23,954,000	$134,324,000	$112,416,000
Cumulative OCFAID	$1,821,095,000	$1,962,464,000	$2,007,782,000	$2,071,605,000	$2,047,651,000	$2,181,975,000	$2,294,391,000
After-Tax Profits	$90,091,000	$76,737,000	$73,459,000	$82,039,000	$62,786,000	$82,779,000	$131,592,000
Less Dividends Proposed	$53,219,000	$45,345,000	$68,017,000	$45,345,000	$45,345,000	$34,009,000	$51,031,000
Less Capitalised Interest	$848,000	$2,220,000	$4,119,000	$3,788,000	$3,014,000	$3,403,000	$2,086,000
Retained Earnings	$36,024,000	$29,172,000	$1,323,000	$32,906,000	$14,427,000	$45,367,000	$78,475,000
Cumulative Retained Earnings	$712,230,000	$741,402,000	$742,725,000	$775,631,000	$790,058,000	$835,425,000	$913,900,000
EBIT	$96,325,000	$71,432,000	$115,203,000	$76,940,000	$93,469,000	$86,724,000	$113,857,000
Long-term Liabilities	$774,646,000	$730,757,000	$809,639,000	$1,020,746,000	$1,208,642,000	$1,415,441,000	$1,310,691,000
Total Equity	$1,402,867,000	$1,651,212,000	$1,675,244,000	$1,851,490,000	$1,988,879,000	$2,031,486,000	$2,126,168,000
Capital Employed	$2,177,513,000	$2,381,969,000	$2,484,883,000	$2,872,236,000	$3,197,521,000	$3,446,927,000	$3,436,859,000
Return on Capital	0.0442	0.0300	0.0464	0.0268	0.0292	0.0252	0.0331
Total Liabilities	$1,731,963,000	$1,679,235,000	$1,671,543,000	$2,003,671,000	$2,115,152,000	$2,514,759,000	$2,264,530,000
Total Equity	$1,402,867,000	$1,651,212,000	$1,675,244,000	$1,851,490,000	$1,988,879,000	$2,031,486,000	$2,126,168,000
Debt/Equity Ratio	1.2346	1.0170	0.9978	1.0822	1.0635	1.2379	1.0651
Period Ending	30/06/1996	31/12/1996	30/06/1997	31/12/1997	30/06/1998	31/12/1998	30/06/1999
Cumulative OCFAID	$1,821,095,000	$1,962,464,000	$2,007,782,000	$2,071,605,000	$2,047,651,000	$2,181,975,000	$2,294,391,000
Cumulative Retained Earnings	$712,230,000	$741,402,000	$742,725,000	$775,631,000	$790,058,000	$835,425,000	$913,900,000
Return on Capital	4.42%	3.00%	4.64%	2.68%	2.92%	2.52%	3.31%
Debt/Equity Ratio	1.2346	1.0170	0.9978	1.0822	1.0635	1.2379	1.0651
A' Shares	$3.19	$2.73	$3.08	$2.34	$1.83	$2.55	$3.05
B' Shares	$4.65	$3.84	$4.50	$3.45	$2.07	$2.98	$3.90
Market Value Equity	$1,641,355,383	$1,855,683,642	$2,140,166,252	$1,634,627,219	$1,103,921,764	$1,564,796,063	$1,965,538,870

Period Ending	31/12/1999	30/06/2000	31/12/2000	30/06/2001	31/12/2001
Operating Cash Flow	$157,915,000	$233,906,000	$189,080,000	-$42,765,000	-$187,401,000
Less Int. and Divs. Received	$0	$0	$0	$0	$0
Less Interest Paid	$0	$0	$0	$0	$0
Less Dividends Paid	$51,031,000	$34,050,000	$51,075,000	$30,273,000	$0
Less Capitalised Interest	$1,511,000	$522,000	$347,000	$15,000	$0
OCFAID	$105,373,000	$199,334,000	$137,658,000	-$73,053,000	-$187,401,000
Cumulative OCFAID	$2,399,764,000	$2,599,098,000	$2,736,756,000	$2,663,703,000	$2,476,302,000
After-Tax Profits	$127,234,000	-$727,378,000	$3,781,000	-$1,429,099,000	-$376,513,000
Less Dividends Proposed	$34,050,000	$51,075,000	$0	$30,273,000	$0
Less Capitalised Interest	$1,511,000	$522,000	$347,000	$15,000	$0
Retained Earnings	$91,673,000	-$778,975,000	$3,434,000	-$1,459,387,000	-$376,513,000
Cumulative Retained Earnings	$1,005,573,000	$226,598,000	$230,032,000	-$1,229,355,000	-$1,605,868,000
EBIT	$158,358,000	$77,411,000	$82,769,000	-$1,413,453,000	-$357,740,000
Long-term Liabilities	$1,359,261,000	$3,799,452,000	$3,622,149,000	$3,956,833,000	$1,671,716,000
Total Equity	$2,236,410,000	$1,590,085,000	$1,902,556,000	$518,039,000	$125,730,000
Capital Employed	$3,595,671,000	$5,389,537,000	$5,524,705,000	$4,474,872,000	$1,797,446,000
Return on Capital	0.0440	0.0144	0.0150	-0.3159	-0.1990
Total Liabilities	$2,394,162,000	$7,399,334,000	$7,639,841,000	$7,595,990,000	$3,956,952,000
Total Equity	$2,236,410,000	$1,590,085,000	$1,902,556,000	$518,039,000	$125,730,000
Debt/Equity Ratio	1.0705	4.6534	4.0156	14.6630	31.4718
Period Ending	31/12/1999	30/06/2000	31/12/2000	30/06/2001	31/12/2001
Cumulative OCFAID	$2,399,764,000	$2,599,098,000	$2,736,756,000	$2,663,703,000	$2,476,302,000
Cumulative Retained Earnings	$1,005,573,000	$226,598,000	$230,032,000	-$1,229,355,000	-$1,605,868,000
Return on Capital	4.40%	1.44%	1.50%	-31.59%	-19.90%
Debt/Equity Ratio	1.0705	4.6534	4.0156	14.6630	31.4718
A' Shares	$2.36	$1.84	$1.57	$1.09	$0.35
B' Shares	$2.80	$2.17	$2.25	$1.45	
Market Value Equity	$1,461,587,606	$1,135,963,972	$1,440,381,926	$958,438,267	$264,887,415

Calculation of the Trajectory

Period Ending	31/03/1990	30/09/1990	30/06/1991	31/12/1991	30/06/1992	31/12/1992	30/06/1993
Cumulative CF	100.00	121.30	79.15	144.10	175.24	216.17	258.35
Cumulative Retained Earnings	100.00	76.43	104.86	139.60	169.52	206.12	250.23
Return on Capital	100.00	62.82	62.82	133.86	133.86	116.62	121.91
Debt/Equity Ratio	100.00	97.88	86.06	106.41	129.76	116.99	129.45
A Share Price	100.00	84.27	74.72	88.76	120.79	144.94	127.53
B Share Price	100.00	84.27	74.72	88.76	123.60	157.30	154.49
Market Value Equity	100.00	84.27	74.72	133.15	182.65	228.43	212.68
Trajectory	**100.00**	**87.32**	**79.58**	**119.23**	**147.92**	**169.51**	**179.23**

Period Ending	31/12/1993	30/06/1994	31/12/1994	30/06/1995	31/12/1995	30/06/1996	31/12/1996
Cumulative CF	329.47	391.45	461.42	507.33	581.18	622.03	670.32
Cumulative Retained Earnings	303.47	361.12	452.23	510.33	598.04	629.90	655.70
Return on Capital	135.50	163.66	216.58	142.37	180.74	112.59	76.33
Debt/Equity Ratio	125.57	135.85	130.65	131.22	140.16	151.97	184.49
A Share Price	200.00	216.85	196.63	193.82	213.48	179.21	153.37
B Share Price	251.69	297.75	275.28	244.38	292.13	261.24	215.73
Market Value Equity	345.43	388.32	355.04	335.02	381.73	329.32	372.33
Trajectory	**241.59**	**279.29**	**298.26**	**294.92**	**341.07**	**326.61**	**332.61**

Period Ending	30/06/1997	31/12/1997	30/06/1998	31/12/1998	30/06/1999	31/12/1999	30/06/2000
Cumulative CF	685.80	707.60	699.41	745.29	783.69	819.68	887.77
Cumulative Retained Earnings	656.87	685.97	698.73	738.85	808.25	889.33	200.40
Return on Capital	118.00	68.18	74.40	64.04	84.32	112.09	36.56
Debt/Equity Ratio	188.04	173.37	176.42	151.56	176.16	175.26	40.32
A Share Price	173.03	131.46	102.81	143.26	171.35	132.58	103.37
B Share Price	252.81	193.82	116.29	167.42	219.10	157.30	121.91
Market Value Equity	429.41	327.97	221.49	313.96	394.37	293.26	227.92
Trajectory	**357.71**	**326.91**	**298.51**	**332.05**	**376.75**	**368.50**	**231.18**

Period Ending	31/12/2000	30/06/2001	31/12/2001
Cumulative CF	934.79	909.84	845.83
Cumulative Retained Earnings	203.44	-1087.24	-1420.23
Return on Capital	38.13	-803.93	-506.56
Debt/Equity Ratio	46.72	12.80	5.96
A Share Price	88.20	61.24	19.66
B Share Price	126.40	81.46	
Market Value Equity	289.00	192.30	53.15
Trajectory	**246.67**	**-90.51**	**-167.03**

Worst-Case Scenario

Period Ending	31/03/89	30/09/89	31/03/90	30/09/90	30/06/91	31/12/91	30/06/92
Operating Cash Flow	$178,628,000		$231,958,000	$62,352,000	-$16,387,000	$190,141,000	$107,991,000
Less Int. and Divs. Received	$5,552,000		$6,509,000		$18,765,000	$0	$0
Less Interest Paid	$18,511,000		$52,842,000		$107,278,000	$0	$0
Less Dividends Paid	$26,237,000		$32,290,000		$18,493,000	$0	$16,800,000
Capitalised Interest	$0		$0		$0	$0	$0
OCFAID	$139,432,000	$0	$153,335,000	$62,352,000	-$123,393,000	$190,141,000	$91,191,000
Cumulative OCFAID	$139,432,000	$139,432,000	$292,767,000	$355,119,000	$231,726,000	$421,867,000	$513,058,000
After-Tax Profits	$72,317,000		$100,954,000	-$26,655,000	$32,152,000	$56,075,000	$59,031,000
Less Deferred Taxation	$123,000,000		$43,000,000		$79,800,000		-$49,652,000
Less Dividends Proposed	$28,000,000		$32,200,000	$0	$0	$16,800,000	$25,200,000
Less Capitalised Interest	$0		$0	$0	$0	$0	$0
Less Deferred Charges			$18,540,000				
Retained Profits	-$78,683,000	$0	$7,214,000	-$26,655,000	-$47,648,000	$39,275,000	$83,483,000
Cumulative Retained Earnings	-$78,683,000	-$78,683,000	-$71,469,000	-$98,124,000	-$145,772,000	-$106,497,000	-$23,014,000
EBIT	$132,697,000		$118,282,000		$77,788,000		$192,267,000
Long-term Liabilities	$459,623,000		$744,074,000		$833,942,000		$842,845,000
Total Equity	$630,972,000		$761,160,000		$741,743,000		$985,048,000
Add Increase in Capital Employed	$202,762,000		$323,017,000		$495,161,000		$671,322,000
Capital Employed	$1,293,357,000		$1,828,251,000		$2,070,846,000		$2,499,215,000
Return on Capital	0.1026	0.0323	0.0323	0.0188	0.0188	0.0385	0.0385
Balance Sheet Liabilities	$1,050,560,000		$1,428,087,000	$1,341,812,000	$1,617,001,000	$1,677,441,000	$1,424,314,000
Add Extra Liabilities	$170,700,000	$170,700,000	$354,237,000	$354,237,000	$723,075,000	$723,075,000	$806,924,000
Total Liabilities	$1,221,260,000	$170,700,000	$1,782,324,000	$1,696,049,000	$2,340,076,000	$2,400,516,000	$2,231,238,000
Balance Sheet Equity	$630,972,000	$0	$761,160,000	$699,991,000	$741,743,000	$951,354,000	$985,048,000
Add Extra Equity	$79,762,000	$79,762,000	$22,154,000	$22,154,000	-$94,373,000	-$94,373,000	$12,119,000
Total Equity	$710,734,000	$79,762,000	$783,314,000	$722,145,000	$647,370,000	$856,981,000	$997,167,000
Debt/Equity Ratio	1.7183	2.1401	2.2754	2.3486	3.6147	2.8011	2.2376

Period Ending	31/12/92	30/06/93	31/12/93	30/06/94	31/12/94	30/06/95	31/12/95
Operating Cash Flow	$126,819,000	$131,331,000	$215,013,000	$210,003,000	$242,280,000	$170,657,000	$269,935,000
Less Int. and Divs. Received	$0	$0	$0	$0	$0	$0	$0
Less Interest Paid	$0	$0	$0	$0	$0	$0	$0
Less Dividends Paid	$4,598,000	$5,195,000	$5,531,000	$26,610,000	$35,479,000	$35,478,000	$53,218,000
Capitalised Interest	$2,394,000	$2,647,000	$1,289,000	$1,911,000	$1,955,000	$788,000	$491,000
OCFAID	$119,827,000	$123,489,000	$208,193,000	$181,482,000	$204,846,000	$134,391,000	$216,226,000
Cumulative OCFAID	$632,885,000	$756,374,000	$964,567,000	$1,146,049,000	$1,350,895,000	$1,485,286,000	$1,701,512,000
After-Tax Profits	$60,937,000	$78,598,000	$88,099,000	$102,566,000	$140,459,000	$119,703,000	$135,136,000
Less Deferred Taxation		$26,572,000		$50,278,000		$69,494,000	
Less Dividends Proposed	$17,139,000	$26,088,000	$26,609,000	$35,479,000	$35,479,000	$53,218,000	$35,479,000
Less Capitalised Interest	$2,410,000	$2,631,000	$1,289,000	$1,911,000	$1,955,000	$788,000	$491,000
Less Deferred Charges							
Retained Profits	$41,388,000	$23,307,000	$60,201,000	$14,898,000	$103,025,000	-$3,797,000	$99,166,000
Cumulative Retained Earnings	$18,374,000	$41,681,000	$101,882,000	$116,780,000	$219,805,000	$216,008,000	$315,174,000
EBIT	$96,109,000	$98,330,000	$115,136,000	$134,321,000	$184,012,000	$128,217,000	$161,292,000
Long-term Liabilities	$1,017,166,000	$938,697,000	$987,203,000	$887,085,000	$918,286,000	$1,013,434,000	$872,690,000
Total Equity	$1,080,378,000	$1,114,172,000	$1,175,433,000	$1,201,759,000	$1,244,156,000	$1,278,782,000	$1,398,578,000
Add Increase in Capital Employed	$671,322,000	$410,888,000	$410,888,000	$320,795,000	$320,795,000	$336,801,000	$351,463,000
Capital Employed	$2,768,866,000	$2,463,757,000	$2,573,524,000	$2,409,639,000	$2,483,237,000	$2,629,017,000	$2,622,731,000
Return on Capital	0.0347	0.0399	0.0447	0.0557	0.0741	0.0488	0.0615
Balance Sheet Liabilities	$1,732,582,000	$1,614,853,000	$1,756,216,000	$1,659,691,000	$1,786,653,000	$1,828,427,000	$1,872,208,000
Add Extra Liabilities	$806,924,000	$704,292,000	$704,292,000	$699,784,000	$699,784,000	$856,739,000	$870,559,000
Total Liabilities	$2,539,506,000	$2,319,145,000	$2,460,508,000	$2,359,475,000	$2,486,437,000	$2,685,166,000	$2,742,767,000
Balance Sheet Equity	$1,080,378,000	$1,114,172,000	$1,175,433,000	$1,201,759,000	$1,244,156,000	$1,278,782,000	$1,398,578,000
Add Extra Equity	$12,119,000	-$157,869,000	-$157,869,000	-$245,946,000	-$245,946,000	-$349,527,000	-$349,527,000
Total Equity	$1,092,497,000	$956,303,000	$1,017,564,000	$955,813,000	$998,210,000	$929,255,000	$1,049,051,000
Debt/Equity Ratio	2.3245	2.4251	2.4180	2.4686	2.4909	2.8896	2.6145

Period Ending	30/06/96	31/12/96	30/06/97	31/12/97	30/06/98	31/12/98	30/06/99
Operating Cash Flow	$155,910,000	$196,808,000	$94,782,000	$135,628,000	$24,405,000	$183,162,000	$148,421,000
Less Int. and Divs. Received	$0	$0	$0	$0	$0	$0	$0
Less Interest Paid	$0	$0	$0	$0	$0	$0	$0
Less Dividends Paid	$35,479,000	$53,219,000	$45,345,000	$68,017,000	$45,345,000	$45,435,000	$33,919,000
Capitalised Interest	$848,000	$2,220,000	$4,119,000	$3,788,000	$3,014,000	$3,403,000	$2,086,000
OCFAID	$119,583,000	$141,369,000	$45,318,000	$63,823,000	-$23,954,000	$134,324,000	$112,416,000
Cumulative OCFAID	$1,821,095,000	$1,962,464,000	$2,007,782,000	$2,071,605,000	$2,047,651,000	$2,181,975,000	$2,294,391,000
After-Tax Profits	$90,091,000	$76,737,000	$73,459,000	$82,039,000	$62,786,000	$82,779,000	$131,592,000
Less Deferred Taxation	$74,976,000		$19,227,000		-$15,781,000		$28,164,000
Less Dividends Proposed	$53,219,000	$45,345,000	$68,017,000	$45,345,000	$45,345,000	$34,009,000	$51,031,000
Less Capitalised Interest	$848,000	$2,220,000	$4,119,000	$3,788,000	$3,014,000	$3,403,000	$2,086,000
Less Deferred Charges							
Retained Profits	-$38,952,000	$29,172,000	-$17,904,000	$32,906,000	$30,208,000	$45,367,000	$50,311,000
Cumulative Retained Earnings	$276,222,000	$305,394,000	$287,490,000	$320,396,000	$350,604,000	$395,971,000	$446,282,000
EBIT	$96,325,000	$71,432,000	$115,203,000	$76,940,000	$93,469,000	$86,724,000	$113,857,000
Long-term Liabilities	$774,646,000	$730,757,000	$809,639,000	$1,020,746,000	$1,208,642,000	$1,415,441,000	$1,310,691,000
Total Equity	$1,402,867,000	$1,651,212,000	$1,675,244,000	$1,851,490,000	$1,988,879,000	$2,031,486,000	$2,126,168,000
Add Increase in Capital Employed	$361,267,000	$364,289,000	$400,331,000	$423,631,000	$475,635,000	$545,989,000	$603,664,000
Capital Employed	$2,538,780,000	$2,746,258,000	$2,885,214,000	$3,295,867,000	$3,673,156,000	$3,992,916,000	$4,040,523,000
Return on Capital	0.0379	0.0260	0.0399	0.0233	0.0254	0.0217	0.0282
Balance Sheet Liabilities	$1,731,963,000	$1,679,235,000	$1,671,543,000	$2,003,671,000	$2,115,152,000	$2,514,759,000	$2,264,530,000
Add Extra Liabilities	$921,365,000	$901,730,000	$946,304,000	$1,016,449,000	$1,012,436,000	$1,082,081,000	$1,031,985,000
Total Liabilities	$2,653,328,000	$2,580,965,000	$2,617,847,000	$3,020,120,000	$3,127,588,000	$3,596,840,000	$3,296,515,000
Balance Sheet Equity	$1,402,867,000	$1,651,212,000	$1,675,244,000	$1,851,490,000	$1,988,879,000	$2,031,486,000	$2,126,168,000
Add Extra Equity	-$381,704,000	-$381,704,000	-$382,640,000	-$382,640,000	-$312,203,000	-$312,203,000	-$201,030,000
Total Equity	$1,021,163,000	$1,269,508,000	$1,292,604,000	$1,468,850,000	$1,676,676,000	$1,719,283,000	$1,925,138,000
Debt/Equity Ratio	2.5983	2.0330	2.0253	2.0561	1.8654	2.0921	1.7124

Period Ending	31/12/99	30/06/00	31/12/00	30/06/01	31/12/01
Operating Cash Flow	$157,915,000	$233,906,000	$189,080,000	-$42,765,000	-$187,401,000
Less Int. and Divs. Received	$0	$0	$0	$0	$0
Less Interest Paid	$0	$0	$0	$0	$0
Less Dividends Paid	$51,031,000	$34,050,000	$51,075,000	$30,273,000	$0
Capitalised Interest	$1,511,000	$522,000	$347,000	$15,000	$0
OCFAID	$105,373,000	$199,334,000	$137,658,000	-$73,053,000	-$187,401,000
Cumulative OCFAID	$2,399,764,000	$2,599,098,000	$2,736,756,000	$2,663,703,000	$2,476,302,000
After-Tax Profits	$127,234,000	$58,849,000	$3,781,000	-$1,429,099,000	-$376,513,000
Less Deferred Taxation		$337,149,000			
Less Dividends Proposed	$34,050,000	$51,075,000	$0	$30,273,000	$0
Less Capitalised Interest	$1,511,000	$522,000	$347,000	$15,000	$0
Less Deferred Charges					
Retained Profits	$91,673,000	-$329,897,000	$3,434,000	-$1,459,387,000	-$376,513,000
Cumulative Retained Earnings	$537,955,000	$208,058,000	$211,492,000	-$1,247,895,000	-$1,624,408,000
EBIT	$158,358,000	$77,411,000	$82,769,000	-$1,413,453,000	-$357,740,000
Long-term Liabilities	$1,359,261,000	$3,799,452,000	$3,622,149,000	$3,956,833,000	$1,671,716,000
Total Equity	$2,236,410,000	$1,590,085,000	$1,902,556,000	$518,039,000	$125,730,000
Add Increase in Capital Employed	$750,303,000	$2,562,480,000	$2,811,539,000	$2,711,908,000	$908,465,000
Capital Employed	$4,345,974,000	$7,952,017,000	$8,336,244,000	$7,186,780,000	$2,705,911,000
Return on Capital	0.0364	0.0097	0.0099	-0.1967	-0.1322
Balance Sheet Liabilities	$2,394,162,000	$7,399,334,000	$7,639,841,000	$7,595,990,000	$3,956,952,000
Add Extra Liabilities	$1,188,596,000	$2,406,133,000	$2,685,603,000	$2,965,158,000	$912,232,000
Total Liabilities	$3,582,758,000	$9,805,467,000	$10,325,444,000	$10,561,148,000	$4,869,184,000
Balance Sheet Equity	$2,236,410,000	$1,590,085,000	$1,902,556,000	$518,039,000	$125,730,000
Add Extra Equity	-$201,030,000	$551,806,000	$551,806,000	$286,399,000	$286,399,000
Total Equity	$2,035,380,000	$2,141,891,000	$2,454,362,000	$804,438,000	$412,129,000
Debt/Equity Ratio	1.7602	4.5779	4.2070	13.1286	11.8147

Calculation of the Trajectory

Period Ending	31/03/90	30/09/90	30/06/91	31/12/91	30/06/92	31/12/92	30/06/93
Cumulative OCFAID	$292,767,000	$355,119,000	$231,726,000	$421,867,000	$513,058,000	$632,885,000	$756,374,000
Cumulative Retained Earnings	-$71,469,000	-$98,124,000	-$145,772,000	-$106,497,000	-$23,014,000	$18,374,000	$41,681,000
Return on Capital	0.0323	0.0188	0.0188	0.0385	0.0385		0.0399
Equity/Debt Ratio	2.2754	2.3486	3.6147	2.8011	2.2376	2.3245	2.4251
Share Price: 'A' Shares	$1.78	$1.50	$1.33	$1.58	$2.15	$2.58	$2.27
Share Price: 'B' Shares	$1.78	$1.50	$1.33	$1.58	$2.20	$2.80	$2.75
Market Value Equity	$498,400,000	$420,000,000	$372,400,000	$663,600,000	$910,350,000	$1,138,478,353	$1,059,981,703
Cumulative OCFAID	100.00	121.30	79.15	144.10	175.24	216.17	258.35
Cumulative Retained Earnings	100.00	62.70	-3.97	50.99	167.80	225.71	258.32
Return on Capital	100.00	58.06	58.06	118.91	118.91	107.30	123.38
Debt/Equity Ratio	100.00	96.88	62.95	81.23	101.69	97.89	93.82
A Share Price	100.00	84.27	74.72	88.76	120.79	144.94	127.53
B Share Price	100.00	84.27	74.72	88.76	123.60	157.30	154.49
Market Value Equity	100.00	84.27	74.72	133.15	182.65	228.43	212.68
Trajectory	**100.00**	**84.54**	**60.05**	**100.84**	**141.53**	**168.25**	**175.51**

Period Ending	31/12/93	30/06/94	31/12/94	30/06/95	31/12/95	30/06/96	31/12/96
Cumulative OCFAID	$964,567,000	$1,146,049,000	$1,350,895,000	$1,485,286,000	$1,701,512,000	$1,821,095,000	$1,962,464,000
Cumulative Retained Earnings	$101,882,000	$116,780,000	$219,805,000	$216,008,000	$315,174,000	$276,222,000	$305,394,000
Return on Capital	0.0447	0.0557	0.0741	0.0488	0.0615	0.0379	0.0260
Equity/Debt Ratio	2.4180	2.4686	2.4909	2.8896	2.6145	2.5983	2.0330
Share Price: 'A' Shares	$3.56	$3.86	$3.50	$3.45	$3.80	$3.19	$2.73
Share Price: 'B' Shares	$4.48	$5.30	$4.90	$4.35	$5.20	$4.65	$3.84
Market Value Equity	$1,721,607,609	$1,935,367,235	$1,769,503,957	$1,669,719,899	$1,902,549,367	$1,641,355,383	$1,855,683,642
Cumulative OCFAID	329.47	391.45	461.42	507.33	581.18	622.03	670.32
Cumulative Retained Earnings	342.55	363.40	507.55	502.24	640.99	586.49	627.31
Return on Capital	138.30	172.32	229.07	150.76	190.11	117.29	80.41
Debt/Equity Ratio	94.10	92.17	91.35	78.74	87.03	87.57	111.92
A Share Price	200.00	216.85	196.63	193.82	213.48	179.21	153.37
B Share Price	251.69	297.75	275.28	244.38	292.13	261.24	215.73
Market Value Equity	345.43	388.32	355.04	335.02	381.73	329.32	372.33
Trajectory	**243.08**	**274.61**	**302.33**	**287.47**	**340.95**	**311.88**	**318.77**

Period Ending	30/06/97	31/12/97	30/06/98	31/12/98	30/06/99	31/12/99	30/06/00
Cumulative OCFAID	$2,007,782,000	$2,071,605,000	$2,047,651,000	$2,181,975,000	$2,294,391,000	$2,399,764,000	$2,599,098,000
Cumulative Retained Earnings	$287,490,000	$320,396,000	$350,604,000	$395,971,000	$446,282,000	$537,955,000	$208,058,000
Return on Capital	0.0399	0.0233	0.0254	0.0217	0.0282	0.0364	0.0097
Equity/Debt Ratio	2.0253	2.0561	1.8654	2.0921	1.7124	1.7602	4.5779
Share Price: 'A' Shares	$3.08	$2.34	$1.83	$2.55	$3.05	$2.36	$1.84
Share Price: 'B' Shares	$4.50	$3.45	$2.07	$2.98	$3.90	$2.80	$2.17
Market Value Equity	$2,140,166,252	$1,634,627,219	$1,103,921,764	$1,564,796,063	$1,965,538,870	$1,461,587,606	$1,135,963,972
Cumulative OCFAID	685.80	707.60	699.41	745.29	783.69	819.68	887.77
Cumulative Retained Earnings	602.26	648.30	690.57	754.05	824.44	952.71	491.12
Return on Capital	123.43	72.17	78.66	67.14	87.11	112.64	30.09
Debt/Equity Ratio	112.35	110.66	121.98	108.76	132.88	129.26	49.70
A Share Price	173.03	131.46	102.81	143.26	171.35	132.58	103.37
B Share Price	252.81	193.82	116.29	167.42	219.10	157.30	121.91
Market Value Equity	429.41	327.97	221.49	313.96	394.37	293.26	227.92
Trajectory	**339.87**	**313.14**	**290.17**	**328.55**	**373.28**	**371.06**	**273.13**

Period Ending	31/12/00	30/06/01	31/12/01
Cumulative OCFAID	$2,736,756,000	$2,663,703,000	$2,476,302,000
Cumulative Retained Earnings	$211,492,000	-$1,247,895,000	-$1,624,408,000
Return on Capital	0.0099	-0.1967	-0.1322
Equity/Debt Ratio	4.2070	13.1286	11.8147
Share Price: 'A' Shares	$1.57	$1.09	$0.35
Share Price: 'B' Shares	$2.25	$1.45	
Market Value Equity	$1,440,381,926	$958,438,267	$264,887,415
Cumulative OCFAID	934.79	909.84	845.83
Cumulative Retained Earnings	495.92	-1546.06	-2072.88
Return on Capital	30.69	-607.99	-408.70
Debt/Equity Ratio	54.09	17.33	19.26
A Share Price	88.20	61.24	19.66
B Share Price	126.40	81.46	
Market Value Equity	289.00	192.30	53.15
Trajectory	**288.44**	**-127.41**	**-257.28**

Calculation of Air NZ's Trajectory

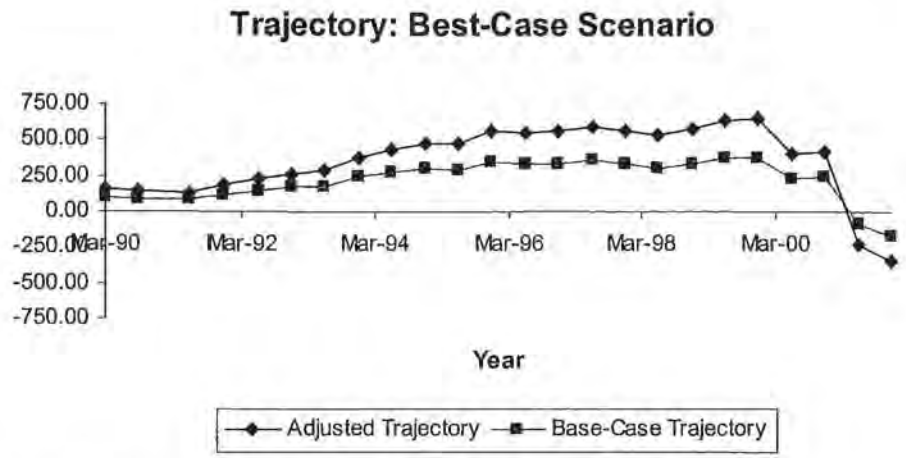
Period Ending	31/03/90	30/09/90	30/06/91	31/12/91	30/06/92	31/12/92	30/06/93
Best-Case Trajectory	100.00	87.32	79.58	119.23	147.92	169.51	179.23
Worst-Case Trajectory	100.00	84.54	60.05	100.84	141.53	168.25	175.51
Air NZ's Trajectory	**100.00**	**85.93**	**69.81**	**110.04**	**144.72**	**168.88**	**177.37**

Period Ending	31/12/93	30/06/94	31/12/94	30/06/95	31/12/95	30/06/96	31/12/96
Best-Case Trajectory	241.59	279.29	298.26	294.92	341.07	326.61	332.61
Worst-Case Trajectory	243.08	274.61	302.33	287.47	340.95	311.88	318.77
Air NZ's Trajectory	**242.33**	**276.95**	**300.30**	**291.20**	**341.01**	**319.24**	**325.69**

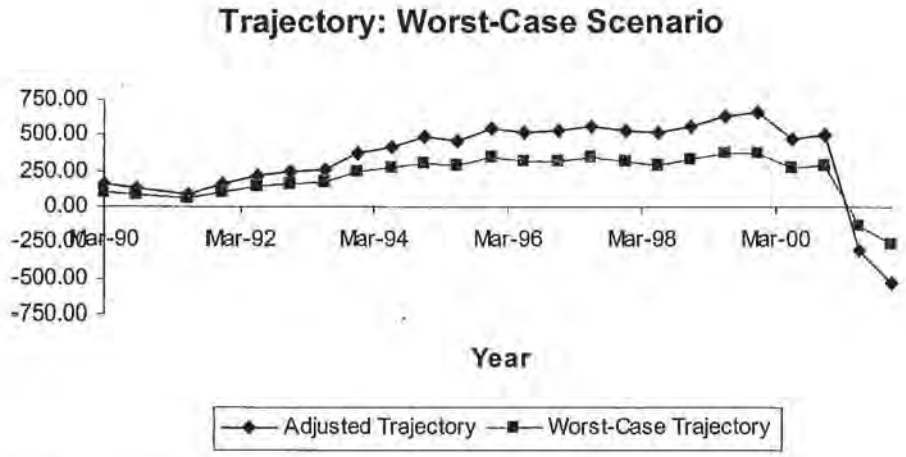
Period Ending	30/06/97	31/12/97	30/06/98	31/12/98	30/06/99	31/12/99	30/06/00
Best-Case Trajectory	357.71	326.91	298.51	332.05	376.75	368.50	231.18
Worst-Case Trajectory	339.87	313.14	290.17	328.55	373.28	371.06	273.13
Air NZ's Trajectory	**348.79**	**320.02**	**294.34**	**330.30**	**375.01**	**369.78**	**252.15**

Period Ending	31/12/00	30/06/01	31/12/01
Best-Case Trajectory	246.67	-90.51	-167.03
Worst-Case Trajectory	288.44	-127.41	-257.28
Air NZ's Trajectory	**267.56**	**-108.96**	**-212.16**

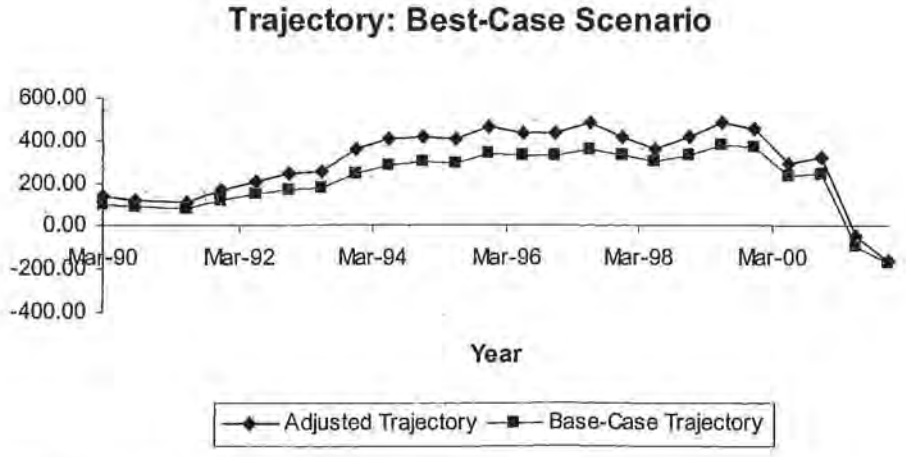
Appendix 4: Sensitivity Analysis Results



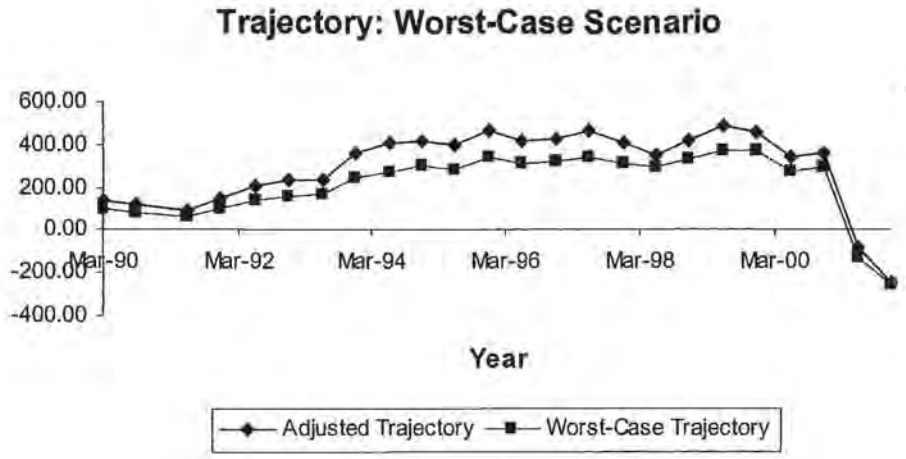
Graph 1: Corporate Indicators weighting doubled



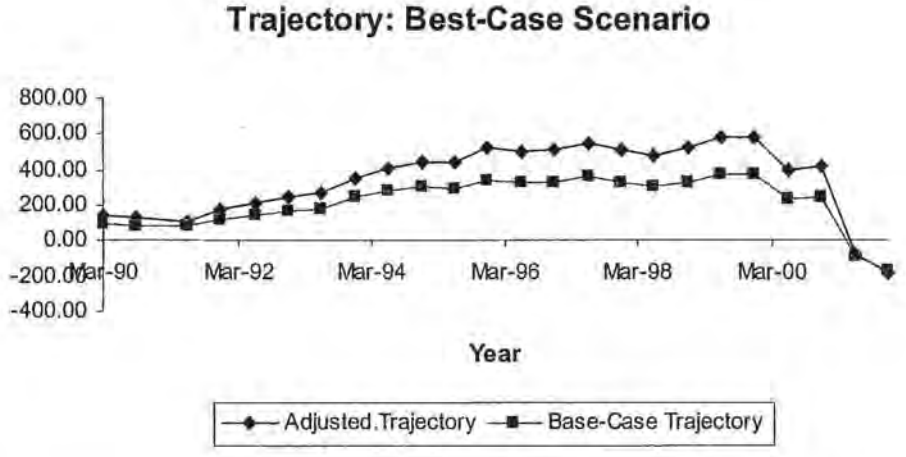
Graph 2: Corporate Indicators weighting doubled



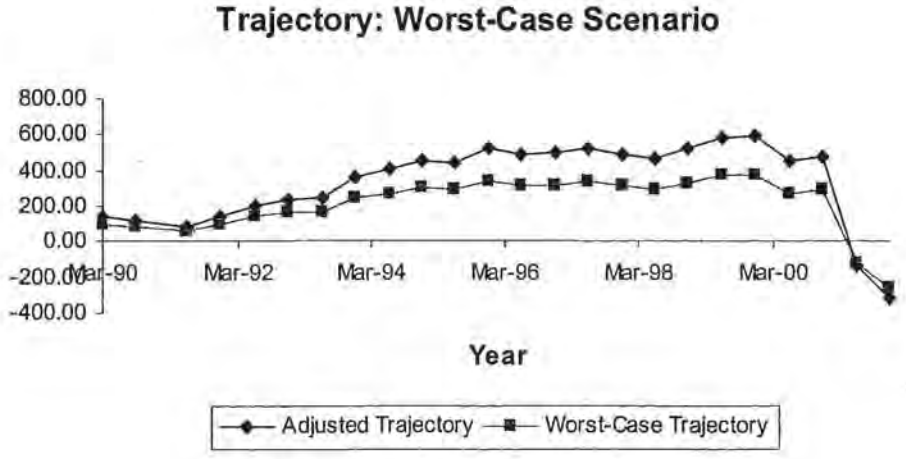
Graph 3: Market Indicators weighting doubled



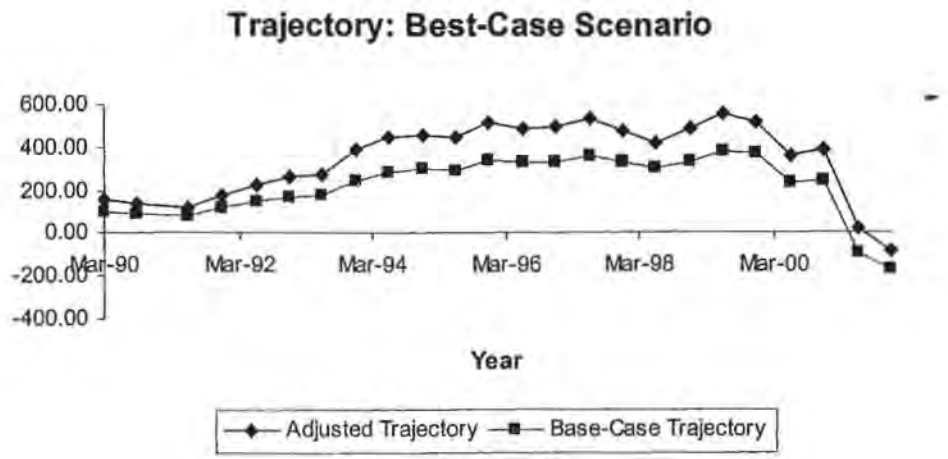
Graph 4: Market Indicators weighting doubled



Graph 5: OCFAID weighting 2.0; CRE and ROCE weighting 1.5; D/E weighting 1.0; 'A' Shares, 'B' Shares and Market Value weighting 1.3



Graph 6: Weighting the same as Graph 5



Graph 7: OCFAID weighting 1.5; CRE and ROCE weighting 1.0; D/E weighting 1.3; 'A' Shares, 'B' Shares and Market Value weighting 2.0

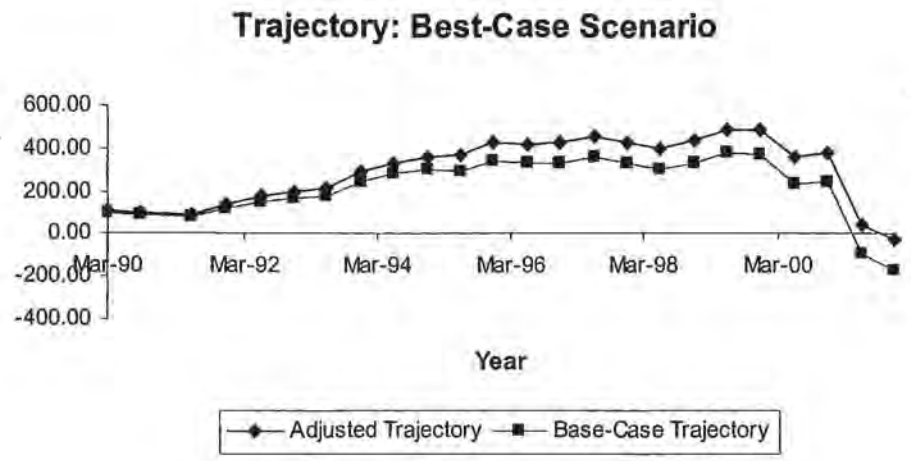
Graph 8: Weighting Same as Graph 7

Graph 9: OCFAID weighting 1.4; CRE and ROCE weighting 2.2; D/E weighting 1.8; 'A' Shares, 'B' Shares and Market Value weighting 1.0

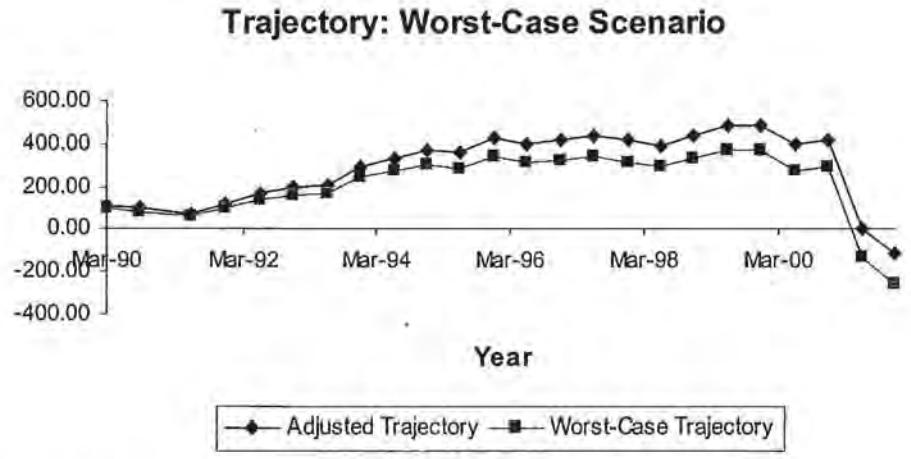
Graph 10: Weighting the same as Graph 9

Graph 11: OCFAID weighting 1.0; CRE and ROCE weighting 1.4; D/E weighting 2.2; 'A' Shares, 'B' Shares and Market Value weighting 1.8

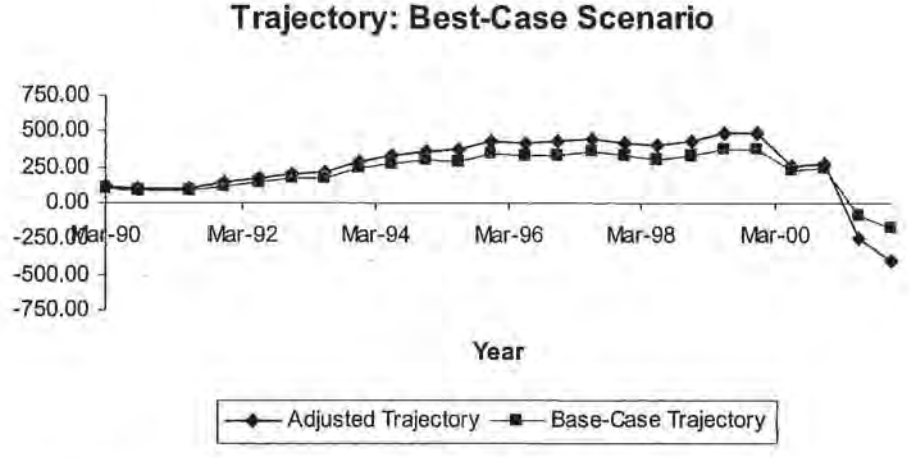
Graph 12: Weighting the same as Graph 11



Graph 13: OCFAID Indicator weighting doubled

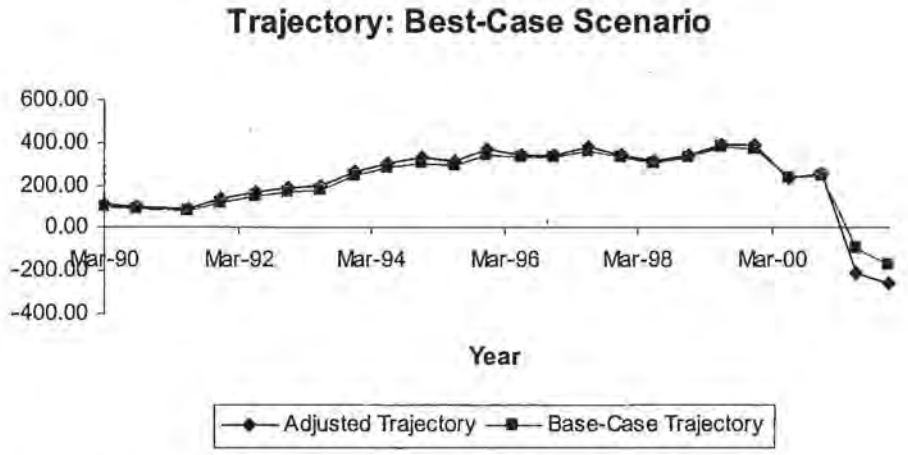


Graph 14: OCFAID Indicator weighting doubled



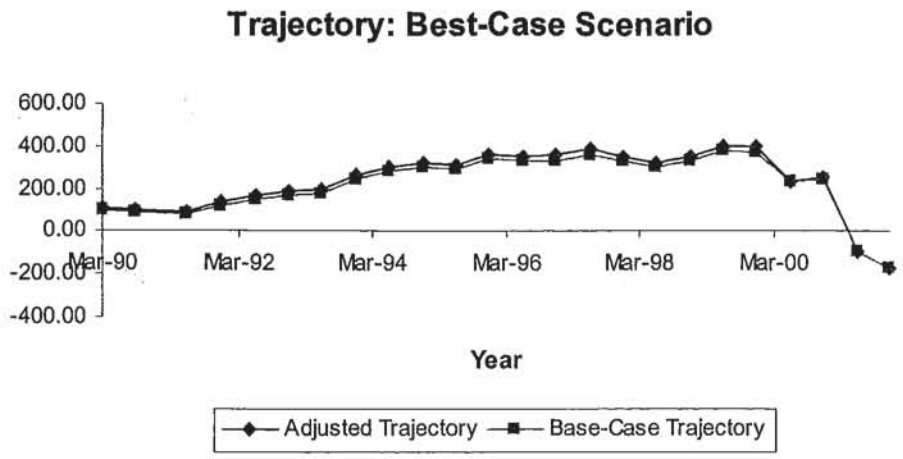
Graph 15: CRE Indicator weighting doubled

Graph 16: CRE Indicator weighting doubled

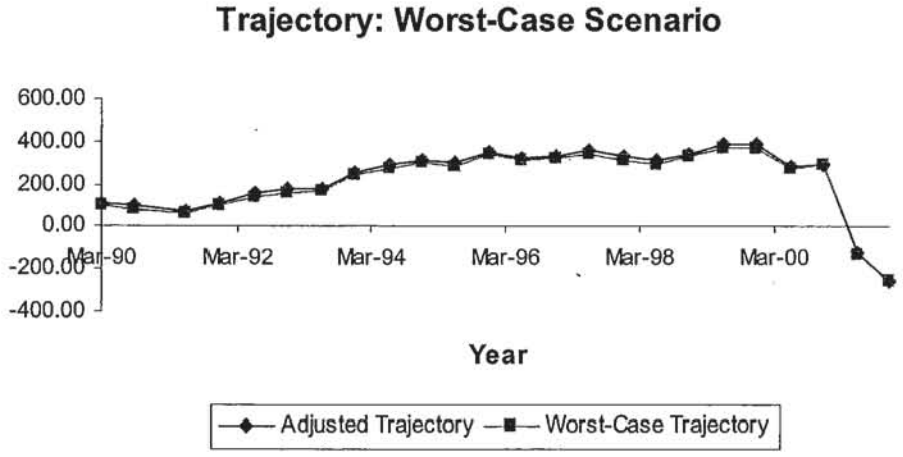


Graph 17: ROCE Indicator weighting doubled

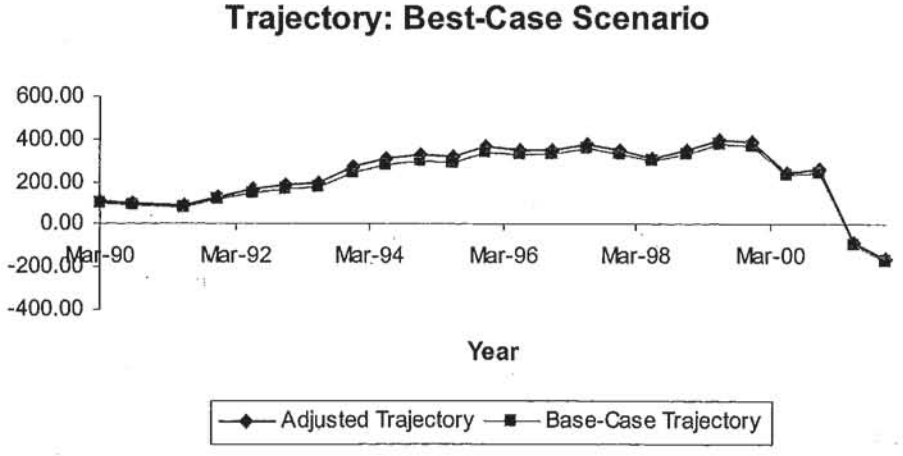
Graph 18: ROCE Indicator weighting doubled



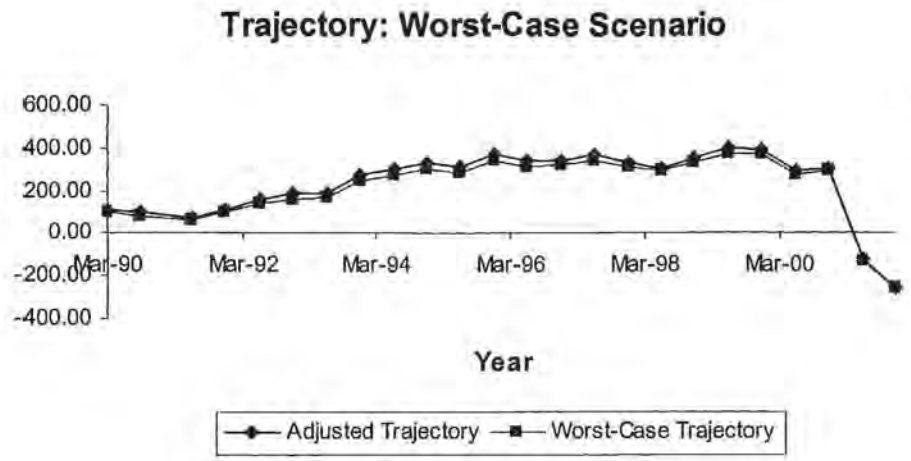
Graph 19: D/E Indicator weighting doubled



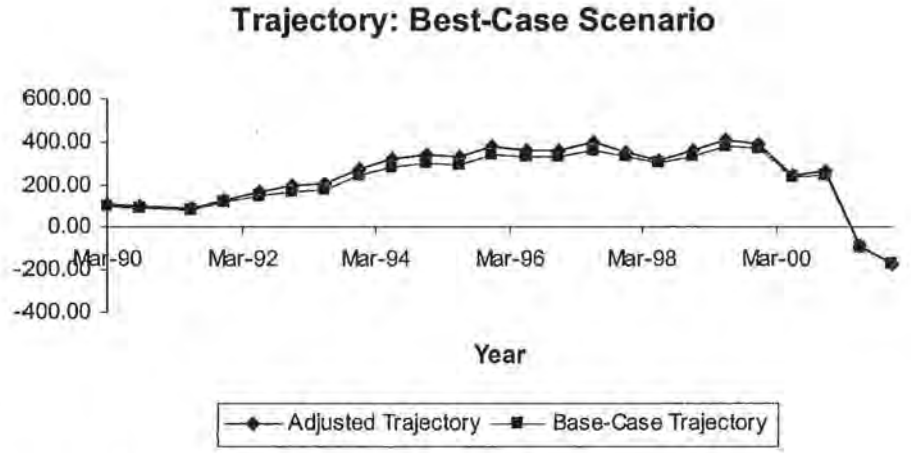
Graph 20: D/E Indicator weighting doubled



Graph 21: 'A' Shares Indicator weighting doubled

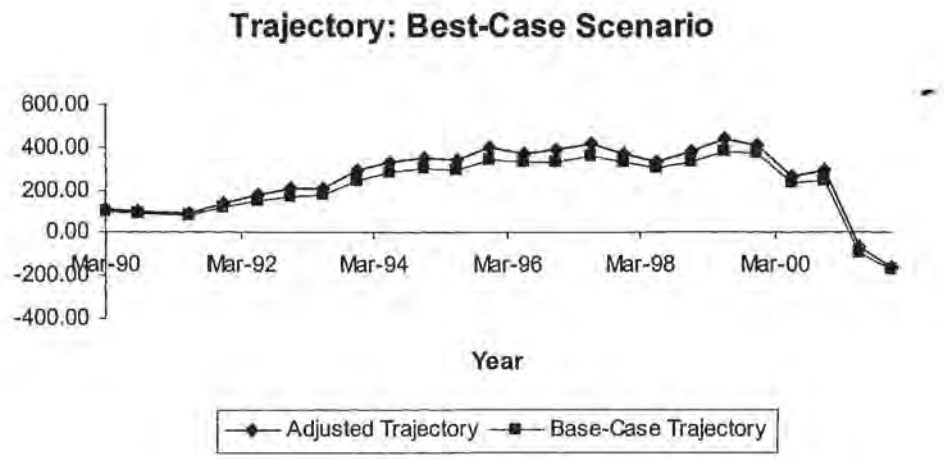


Graph 22: 'A' Shares Indicator weighting doubled



Graph 23: 'B' Shares Indicator weighting doubled

Graph 24: 'B' Shares Indicator weighting doubled



Graph 25: MV Indicator weighting doubled

Graph 26: MV Indicator weighting doubled

Notes to Abbreviations

OCFAID = Operating Cash Flows after Interest and Dividends

CRE = Cumulative Retained Earnings

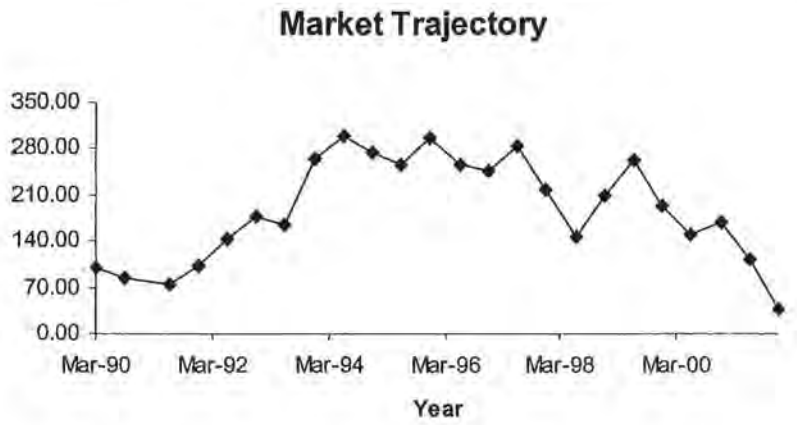
ROCE = Return on Capital Employed

D/E = Debt to Equity Ratio

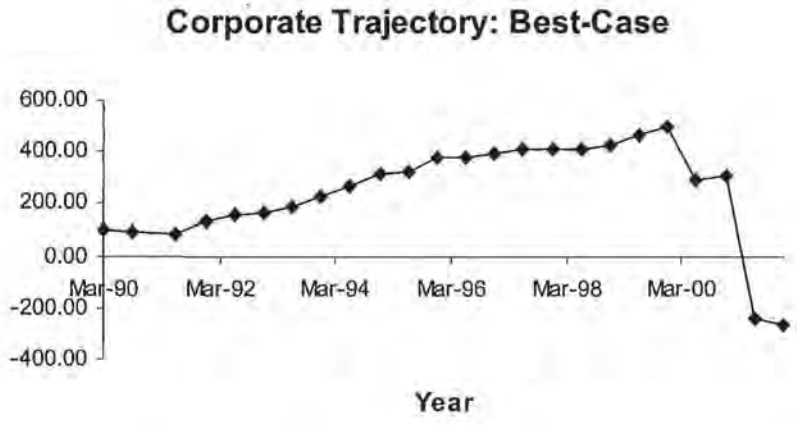
MV = Stock Market Share Value

Unless otherwise stated, each indicator has a weighting of 1.0

Appendix 5: Market and Corporate Indicators



Graph 1: Equally Weighted Market Trajectory



Graph 2: Equally Weighted Corporate Trajectory: Best-Case Scenario

Graph 3: Equally Weighted Corporate Trajectory: Worse-Case Scenario